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THE RESOURCE FOR INFORMATION EXECUTIVES

What Went Wrong
with Cigna's CRM

Page 66

E-Commerce
Leadership:
CIOs Prepare for
the E-Recovery

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PLUS
Wallington on
How to Be an
Ethical Leader

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Schrage on
Resolving Channel
Conflicts

Page 44

YOUR OPEN SOURCE PLAN

If you don't have one today,
you'll be paying too much
for IT tomorrow

Page 52

KB Toys VP of IT
Tom Jeffery no
longer pays annual
licensing fees on
his 10,000 cash
registers. He's
implemented his
open-source plan.
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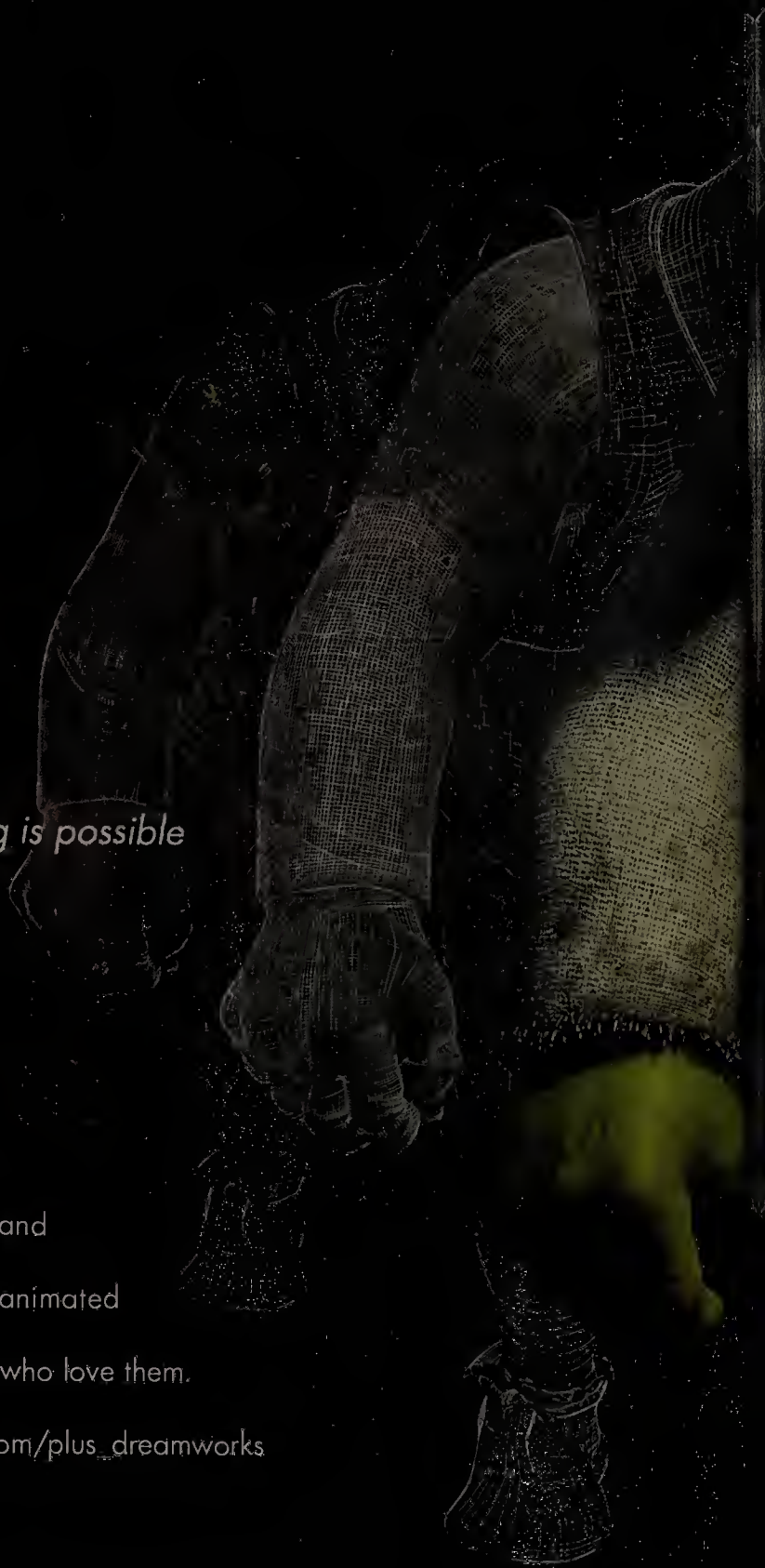
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Cover Story

OPEN SOURCE | 52

YOUR OPEN SOURCE PLAN

Once a toy for geeks, open source is slowly but surely filtering into the enterprise and transforming the way software is designed, sold and supported. And any CIO without an open-source strategy in 2003 will be paying too much for IT in 2004.

By Christopher Koch

COVER PHOTO BY STEVEN VOTE



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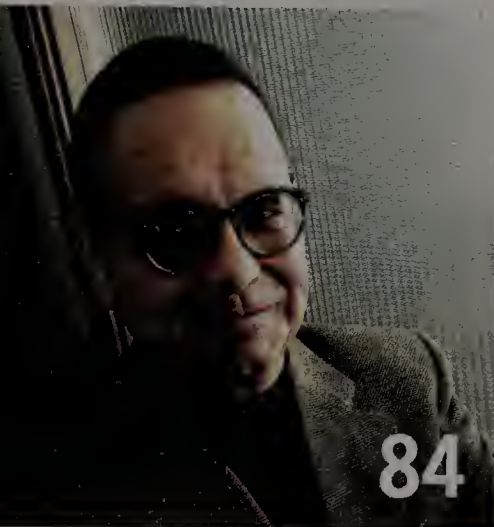
Tom Jeffery, VP of IT for KB Toys, sent out an RFP for 10,000 new cash registers and a new system to run them. To his surprise, the three vendors' systems that met his criteria were all written in Java and all ran on Linux.

Features

COMPUTING TRENDS

Showdown at the 6.0 Corral | 62

In a 2001 *CIO* survey, 85 percent of the respondents said they weren't going to sign up for Microsoft's new subscription plan. Our latest survey shows that more than half have stuck to their guns. That's because a new factor has entered the equation: choice. Now CIOs have it. *By Christopher Koch*



84

CIO Garry Kelly's e-commerce model for Sears focuses on growing sales, and providing stability and efficient fulfillment. "That means the back end of e-commerce—pick, pack and ship—has to be every bit as good as the click, select and check out," says Kelly.

INTEGRATION MANAGEMENT

Cigna's Self-Inflicted Wounds | 66

A cautionary tale about the perils of IT transformation and the dangers of counting your chickens before they hatch.

By Alison Bass

CASE FILES: APPLIED WIRELESS

Big Network Off Campus | 76

Technologists and local merchants have turned downtown Athens, Ga., into a lab for mobile applications aimed at local college students. *By Michael Kanell*

E-COMMERCE

The New Lords of E-Biz | 84

E-commerce is down but hardly out. It's now up to CIOs to lead online tactics and strategy. And when the economy finally rebounds, so will business units' interest in e-commerce.

By Elana Varon

MORE ►►►



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Columns

TOTAL LEADERSHIP

Honestly?! | 41

Ethical behavior isn't easy, just essential. Here's how to run an honest organization and be an ethical leader.

By Patricia Wallington

MAKING I.T. WORK

Build the Business Case | 44

Extracting value from the customer's customer is no easy task. *By Michael Schrage*

CXO PERSPECTIVES

The Importance of Being Influential | 46

Schneider National's CEO says IT is too important to business today for the CIO to be seen but not heard. *By Chris Lofgren*

SOUND OFF

Ready for Instant Messaging? | 90

IM isn't just for teenagers anymore. But are the downsides too much for corporate America? *By Art Jahnke*

CAREER COUNSEL

Laid Off | 94

Our three career experts offer guidance to CIOs and IT professionals who were recently let go.



"The character of the leader casts a long shadow over his organization and can determine the character of the organization itself."

—Patricia Wallington, Total Leadership columnist, on ethical behavior Page 41

EMERGING TECHNOLOGY | 98

Servers on the Edge

Blade servers, compact card-based devices that promise to replace standalone servers, offer a less costly and more reliable way of handling massive, parallel processing-based computations. As blades slice into the mainstream, the technology may mark an important new stage in server evolution—one that will save space and streamline IT management. *By John Edwards*



Sections

TRENDLINES | 26

Making open source pay; Spam's supply chain; Three questions with Robert Kaplan; Olympic integration hurdles in Athens. *And more*

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Mandate from SEC regulators: Save your electronic documents.

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EMERGING TECHNOLOGY | 98

Blade servers promise efficiency and cost savings. *By John Edwards*

UNDER DEVELOPMENT | 104

The Semantic Web intends to make Web searching more efficient.

TECH TACT | 106

Technology Editor Christopher Lindquist says you shouldn't let the boom doom get you down.

In Every Issue

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Timing Is Everything | 16

Innovation might be forgotten now, but you still need to consider new developments for the future. *By Abbie Lundberg*

INBOX | 20

Reader feedback

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Abstracts of all the feature stories found in this issue.



RAM:

Attempt by certain large vendors to shove their proprietary technology solutions down your enterprise.

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Wrestling with staffing restrictions and a workload that had grown to more than 520,000 cases a year, the Miami-Dade County Clerk of Courts envisioned a paperless traffic court to serve the public online instead of in line.

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One of the world's leading manufacturers of Formula One race cars, WilliamsF1 wanted to transform its BMW WilliamsF1 Team website from a destination for fans into a portal for partners and sponsors

capable of generating its own revenue streams.

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Interactive features from March 15 to March 31

TALK BACK

Is Microsoft driving you into the arms of Linux?

Microsoft's Licensing 6.0 requires enterprises to buy a two- or three-year subscription that covers any number of upgrades (see **Showdown at the 6.0 Corral**, Page 62). Hold off to upgrade until you want and you'll pay the full license price.

CIOs' reaction? "This puts open source on my radar screen," says one. So isn't it funny that the only major vendor that continues to resist the march of open source is Microsoft, though company officials have stopped calling it "a cancer," as they did a few years ago, and now acknowledge Linux as a viable competitor (see **Your Open-Source Plan**, Page 52). What's your take? Have you bent to Microsoft's will, or are you holding out on Licensing 6.0? And does open source seem more appealing to you now than ever? Share your thoughts, pros and cons. Go to comment.cio.com/talkback.

Find links to the stories mentioned above in the **WEB CONNECTIONS** box at www.cio.com.

Peer Resources

CIO's sister publications—CSO magazine for the chief security officer and Darwinmag.com for the nontechnology executive—offer added perspective and resources for your colleagues.

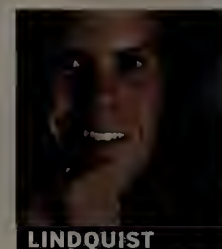
- Athens, Ga., has embraced Wi-Fi in a big way (see **Big Network Off Campus**, Page 76), despite lingering wariness about 802.11b security. However, any wishy-washiness might be dispelled by using optical infrared instead. Read **Seeing Infrared** on www.csoonline.com.
- The field of "There's got to be a better way" has produced the Semantic Web (see **Under Development: Searching Through Babel**, Page 104). If your colleagues' eyes cross when you mention the words Semantic Web, send them to **What's Next: Semantic Applications** on www.darwinmag.com.



Our Daily Web

MONDAY Tech

Tact Technology Editor Christopher Lindquist covers what's coming.



LINDQUIST

TUESDAY

Alarmed Security experts Sarah Scalet and Scott Berinato give you something to worry about.

WEDNESDAY

Metrics Web Writer Jon Surmacz makes sense of the numbers.



SURMACZ

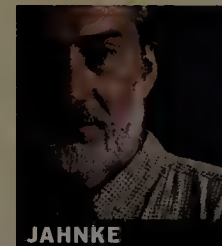
THURSDAY Sound

Off Web Editorial Director Art Jahnke on ethical dilemmas.

FRIDAY The Big Picture Charts worth a thousand words.

Editor's Picks: Wait, There's More

A reader's quest for knowledge only begins with a CIO feature story. That's because when every story is presented on CIO.com, it gets a Learn More box of links to similar stories, as well as pertinent analyst reports, recent metrics and research centers.



JAHNKE

So even though you might think you know the whole story, until you've visited it online, you haven't seen it all.

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—Art Jahnke
Web Editorial Director

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From the Editor

lundberg@cio.com



In case you feel like you're the only one seriously checking out open source, you have plenty of company. Read three of our latest research reports ("IT Departments Under Stress," "Confidence in Open Source Growing," and "Open Source Gains Momentum") to see how your peers are coping. Go to www2.cio.com/research to find them.

Timing Is Everything

IF YOU LOOK AT THE NUMBERS these days, it doesn't seem like there's a whole lot going on. For many businesses, revenue and profits are down. Investment and employment, especially in IT, are also down.

But corporate performance and spending aren't on their own reliable indicators of activity. And one thing that has been up pretty dramatically is productivity. People are working harder and in many cases better than we've seen in a long time.

Some of this increased activity is certainly the result of downsizing. With fewer people to do the company's work, everyone has to do more to earn his keep. But making ends meet is just part of the picture. As the economy drags along, every organization is raising the bar on performance and execution—making sure that every aspect of the company's activities is optimized. And there is increasing interest in new initiatives that will stimulate and reenergize the business.

From an IT perspective, new initiatives can be a scary thing right now. With budgets slashed and zero tolerance for any project that doesn't deliver, who wants to try something new?

In fact, interest in new technologies has plummeted during the past 12 months. One sign of this comes from a recent *CIO* magazine survey of more

than 1,000 of our readers. The percent of respondents who said coverage of emerging technologies was "useful to my job" dropped by almost half since the year before. Still, pressure is building for IS departments to deliver new capabilities, and it's only a matter of time before IT innovation kicks in again.

But timing is everything. CIOs who read John Edwards' piece on blade servers (Page 98) may conclude this is a promising new technology—but one that can wait a while. The Emerging Technology item on the Semantic Web (see "Searching Through Babel," Page 104) presents an even longer time horizon.

Our cover story on open source, however, demands your attention now. Why? Because the decisions you make about platforms today will have a dramatic impact on your cost of doing business for many years to come. (Please see "Your Open-Source Plan," Page 52.) Controlling those costs with an open and flexible platform will pave the way for all those new IT initiatives that are filling the pipeline.

What pressures are you feeling from your business colleagues for new IT development? And how do you know when the time is right to invest in a new technology? I'd love to hear from you.

Allie Lundberg

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examples? Windows XP Professional offers built-in audio and video-conferencing capabilities that make the whole experience easy and intuitive for your end users. With the Send for Review feature, Office XP Professional lets users easily assign roles to everyone involved in the document review

cycle, while automatically providing the correct tools for each reviewer and allowing changes to be easily merged back into the original document. And finally, several new features make deployment easier than ever. For more ideas about managing your desktops, visit microsoft.com/desktop

InBox

Reader Feedback

FINDING THE MESSAGE IN THE NOISE

Your CIO Observer column "Zero Visibility" in the Dec. 1, 2002, issue resonated with me. I've spent the past several years heavily engaged in a project to roll out both ERP and shop-floor systems across our company's 45 plants. I've witnessed behaviors like those you described in both our users and my colleagues. Although we frequently acknowledged the importance of change management to our effort, our attempts at it were somewhat amateurish.

I'm intrigued by your reference to spatial disorientation and particularly field independence. I wonder if you could suggest any resources that might help me sort out the field-dependent people from the field-independent people. I should add that I'm not interested in selecting people for one task or another with this approach. Rather, I'm interested in "knowing my audience." It seems that a serious change-management effort would be well served by knowing which people are more likely to be overwhelmed by the sensory input and which ones will be able to focus.

Your article has helped me realize that it's not really enough to tell people what they need to hear. You have to tell them in such a way that they can pick out the significant message from the noise.

Bill Wight

Voridian—a Division of Eastman Chemical
urwright@voridian.com

TO INTEGRATE, JUST FOLLOW THE PLAN

Your article "Integrating America" in the Dec. 1, 2002, issue was both infor-

Understanding the new mission—which is more than the aggregate of the existing missions—will allow the effort to succeed.

The 18 months needed to build the architecture is probably a safe but not extremely aggressive time frame. The overall estimate of effort from design through implementation for a system this size must be at the far end of the three to five years. More realistically though, a system the size of the DHS system, with all of its tentacles, would normally require a five- to seven-year time frame.

Finally, the legacy systems will represent a major challenge. Targeting the functions based on priorities from one to five is a step in the right direction, but also, the effort must include the forceful effort

to ensure a common set of processes against these functions.

I believe the agenda is makeable, but only with a strong will to follow the original time line. It reminds me of the creation of the Department of Defense, which was done only when the focus

was on accomplishing the task.

Don Belles

Boeing Commercial Airplane
Information Systems

HOW TO PROPERLY ANALYZE PERSONALITY TYPES

I am writing in reference to the Total Leadership column ("The Ins and Outs of Personality") in the Jan. 15, 2003, issue. I had difficulty buying into many of the stereotypical points Patricia Wallington made. More specifically, the author's perception of extroverts and introverts is false in many cases.

The main difference between extroverted and introverted individuals is the method by which they process information, not whether or not they "have a great personality" or need to find an avenue to "bring out what's on the inside." Extroverts are more vocal with their thought processes, not necessarily more "sociable and unreserved" than introverts. Introverts, on the other hand, tend to internalize their thought processes, which gives them the appearance of being shy, at least in the author's eyes.

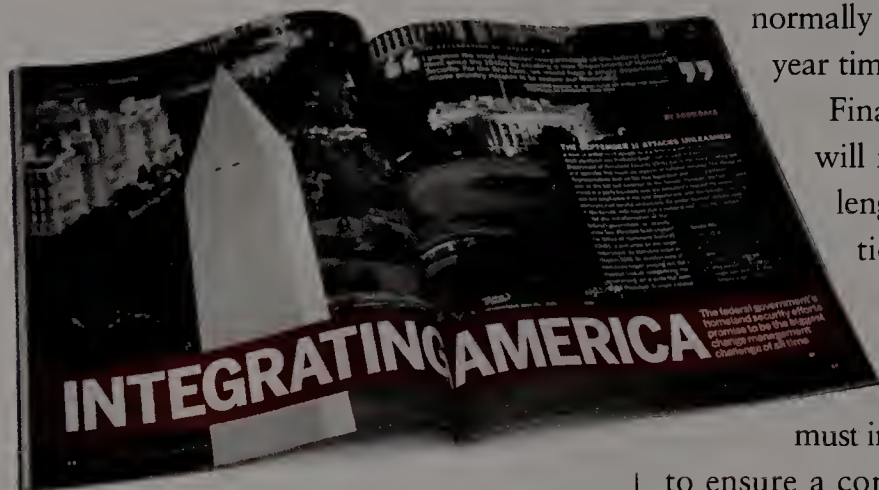
It seems to me the author could have researched the topic a little more thoroughly before deciding to publish her expert opinion on personality typing.

Michael Honza

Foxworth Galbraith Lumber
mhonza@foxgal.com

WHAT DO YOU THINK?

Send your thoughts and feedback to letters@cio.com. Letters may be edited for length or clarity. For links to all articles mentioned, go to www.cio.com/printlinks.



mative and enjoyable. I would like to comment on the "makeability" of the goals set forth in your article.

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network. They'll even play nice with your multi-vendor environment. *The Seattle Times* saved over \$180,000 in related costs the first year alone. Without missing a deadline. Visit avaya.com/ip to access our ROI tools for IP telephony. Or call **866-GO AVAYA**.

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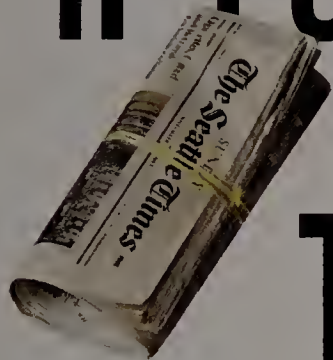
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Edited by Lafe Low and Michael Goldberg

OPEN - SOURCE SOFTWARE

Making Open Source Pay— A Developer's Dilemma

AT I.T. CONFERENCES, Marty Roesch gets a lot of attention—and offers for drinks at the hotel bar—once attendees find out who he is.

A typical reaction: “Hey, it’s the Snort guy! You know, Snort! The pig with the big sniffing nose on the website? It’s a riot!”

We use it everywhere. Hey man, have a drink on me!”

As the Snort guy, Roesch is the creator of an open-source network intrusion detection system and associated website, Snort.org. He spent years developing the program and enjoys the recognition. Through the Internet and word of mouth, thousands of IT administrators have downloaded his software to use at their companies. “You’d think it’d get old,” he says. “But it takes us back to the heroic age of computing when individuals were recognized for doing great things.”

There’s just one problem: The recognition and free drinks don’t pay Roesch’s hotel bills at the conferences. Acceptance is one thing; making a living is another.

Open-source developers like Roesch have a couple of choices. One is to be a consultant for the software they create, in which case they devote their lives to running a consulting business when they’d rather be writing code. The other is to build proprietary extensions to their open-source applications to create a more well-rounded package and sell that for real money (a move frowned upon in open-source circles, of course). That’s what Roesch did with his company, Sourcefire. The Columbia, Md.-based company layers some

management tools and a friendly GUI on top of Snort (which is still available for free) on a preconfigured server for sale to CIOs who don’t want to manage the stuff themselves.

Roesch says he had no choice. Venture capitalists wouldn’t touch his company when he tried to sell it in 2001. “They wouldn’t go near it unless we had some [proprietary] intellectual content wrapped around it,” Roesch says.

Once he put a proprietary wrapper around Snort, Roesch got his money, and his business is growing nicely, he says. (Sourcefire is privately held.) Other nascent open-source software developers are doing the same thing. Sweden’s MySQL, for example, offers separate proprietary versions of its open-source database with

Continued on Page 28

STATSHOT

B2B the eBay Way

\$4.6 billion: Gross merchandise sales on eBay, fourth quarter of 2002

\$250 million: Estimated gross sales of business goods by business buyers in the fourth quarter of 2002

5.4 percent: Slice of eBay’s total merchandise sold in the fourth quarter of 2002 that represents B2B

500,000: Weekly eBay listings for capital equipment, from farming machinery to restaurant supplies

\$365,000: Asking price for an oil tank farm near Tbilisi, Georgia, posted on eBay on Feb. 4, 2003

\$1.2 billion: 2002 total revenue for eBay (up 62 percent) from fees for listing and selling items online

SOURCE: EBAY



Marty Roesch

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Open Source Pay

Continued from Page 26

service contracts that pump up revenue.

But even the companies that have managed to successfully sell themselves as service and support providers for open source have struggled to find a winning business model.

Take Red Hat, the GNU/Linux operating system distributor based in Raleigh, N.C. Though \$79 million Red Hat is now profitable, it was a long time coming. The company incorporated in 1998, went public in 1999 and posted its first profitable quarter in November 2002.

Red Hat became the nation's dominant distributor by selling Linux with add-on tools developed by its own staff and by partnering with big companies such as Dell, IBM and Oracle. It's a strategy reminiscent of the dominant proprietary operating system company, Microsoft, except that Red Hat must make its source code available to everyone who buys it, under the GNU General Public License that governs Linux. (For more on the open-source debate, see "Your Open-Source Plan," on Page 52.)

Open Source Gains Mind-Share

Companies turn to open source because they believe it costs less and is more reliable than traditional software, but they worry about a lack of support, according to a recent *CIO* online survey of 375 IT professionals. Almost two-thirds (64 percent) of the respondents said their companies use open-source software. Here's what they had to say about its strengths and weaknesses. (To see why their fears are misplaced, read "Your Open-Source Plan," Page 52.)

Top three strengths of open source:

Lower capital investment	63 percent
Lower total cost of ownership	59 percent
Greater reliability and uptime	41 percent

Top three weaknesses of open source:

Lack of vendor support	52 percent
Lack of labor skills to support open source	50 percent
Viability of open-source vendors	45 percent

Red Hat's future, says President and CEO Matthew Szulik, is delivering a subscription Linux service to customers with dedicated Red Hat support. "We define software as a service," he says.

Right now, the open-source community is rooting hard for Red Hat and other vendors with open-source roots because they

are the underdogs. But if Red Hat becomes the Microsoft of Linux, all those programmers in the open-source community may begin, like the Snort guy, to wonder why they are still working for free.

At the very least, somebody owes Linux creator Linus Torvalds a drink.

—Christopher Koch

E - M A I L T R A F F I C

The Great Spam Supply Chain

SPAM IS HITTING the big time and will make up half of all corporate e-mail in 2003, the Aberdeen Group predicts. As with all industries, there's a division of labor. Each of those annoying, unread lines in your inbox is really the last step in a sophisticated supply chain—or rather the next-to-last step.

"Somebody must be buying the stuff, or none of this would be profitable," says Maureen Caplan Grey, a research director for Gartner Research. Grey breaks down the spam supply chain this way:

Software providers: The people who create software that makes it extremely easy to send blanket e-mails—to *johna*, *johnb*, *johnc@thecompany.com*—that look for valid e-mail addresses.

E-mail harvesters: The people who spend all day using this software to hunt for valid e-mail addresses, which they compile into lists and sell. Pay dirt? An autoreply set up by someone going on vacation.

Spammers: The people who actually send out the mailings—again, using specialized software—that promise fame, fortune and

enhancements for body parts that recipients might or might not have.

Sellers: The companies looking to hawk their goods or services to *anyone@anywhere*.

Profit-seekers are also on the other side, of course. Just ask Network Associates, which in January bought Deersoft, a San Mateo, Calif.-based provider of antispam technology, for an undisclosed amount. Art Matin, president of Network Associates' McAfee unit, says the acquisition is just "the first in a series of investments" in antispam and content-filtering technology.

—Sarah D. Scalet





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Washington Watch

Edited by Elana Varon

Mandate from SEC Regulators: Save Your Electronic Documents

AMONG THE NEW RULES issued by the SEC to enforce the Sarbanes-Oxley Act is one that says an auditing firm must keep every document that influences its report about a client for at least seven years—everything from the CEO's e-mail to a sticky note with some key figures on it—in case they are needed for an investigation. According to emerging legal interpretations of the rules, as a practical matter, every public company—and possibly some private ones—have to start keeping these records too if they wish to avoid liability in some unforeseen investigation. The rules take effect Oct. 31, giving CIOs seven months to deploy the capability to save records if they don't already have it.

"The possible implications are far broader than some [experts] concluded initially, and the document management implications are probably greater than meets the eye," says Randolph Kahn, a Chicago-based lawyer and regulatory compliance consultant.

Here are some tips for getting started with a document retention plan that meets the spirit and letter of the law.

1. Call the lawyers. Meet with your chief counsel and other executives, and create a document retention and destruction policy. Kahn says that companies need two policies: a business-as-usual policy, in which certain types of documents are regularly destroyed; and an emergency policy that specifies which documents must be saved at the first sign of litigation. Specific decisions about what gets saved and destroyed are up to each company, but it's foolish to destroy accounting or financial records, says Ladd Hirsch, a Dallas-based securities lawyer.

2. Assess IT requirements. Figure out what IT investments are needed to support



REP. MICHAEL OXLEY

the policy. Saving e-mail is just the tip of the iceberg that includes spreadsheets, text files, voice mails and PowerPoint presentations, and just storing documents probably won't pass muster with regulators. Document retention systems should index material by topic—such as contracts or accounting—rather than document format—such as PDF or Word—and should also be tamper-proof. Such a system may include audit trails, forbid overwriting and require passwords to access documents, says Kahn.

3. Train employees. E-mail won't archive itself. Employees have to be familiar with retention and destruction policies and how to use the systems that support them. Recently, five brokerages agreed to \$8.3 million in fines because employees deleted e-mail pertaining to a fraud investigation. While the fines stemmed from violations of a different securities law, Hirsch says to expect the same kind of fines under Sarbanes-Oxley. If employees break the rules, but the company can demonstrate that it provided adequate training, the company may reduce its liability.

4. Enforce the policy. Hirsch says that having a document retention policy and not enforcing it is worse than not having a policy at all. At the start of the Enron scandal, Arthur Andersen compounded its troubles by enforcing its document destruction policy only when investigators came calling. "You can't babysit an entire workforce," says Kahn, and enforcement isn't just the CIO's responsibility. But by putting in place the proper technology and providing the right training, he adds, "you can help them get it right." —Ben Worthen

CIO.com For links to the full text of the **SARBANES-OXLEY ACT** and the **SEC IMPLEMENTATION REGULATIONS**, see www.cio.com/government.

Which Records Must Be Saved?

Here's how the SEC defines which audit-related records must be maintained:

"The final rule requires that the auditor retain records relevant to the audit or review, including work papers and other documents that form the basis of the audit or review of an issuer's financial statements, and memoranda, correspondence, communications, other documents and records (including electronic records) that meet two criteria. The two criteria are that the materials: 1. are created, sent or received in connection with the audit or review; and 2. contain conclusions, opinions, analyses or financial data related to the audit or review."

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Nimda... hmmm... nope.
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I. T. VALUE

Three Questions with Robert Kaplan

How does a “traditional” valuation methodology such as the Balanced Scorecard stand up to today’s intense focus on financials? Technology Editor Christopher Lindquist recently caught up with its cocreator, Robert S. Kaplan, Marvin Bower professor of leadership development at Harvard Business School, to hear his thoughts on the state of the Scorecard.

CIO: With the continued economic slump, there’s a strong emphasis on financial criteria. Since those are only one-quarter of the Balanced Scorecard, is it less in line with today’s needs or is it still a valid valuation methodology?

Robert S. Kaplan: The Scorecard is more important now because the risk is that too many companies will go back to their old familiar ways, focusing only on financials and losing sight of their long-term strategy. Organizations that are still managing by the Scorecard are trying to downsize in ways that minimize the disruption to long-term capability development. They try to make their spending reductions more balanced, as it were, and not falling entirely on the long-term investments like people and systems. Organizations living with the Scorecard tell us there are still difficult choices, but the discussion about what to cut is more balanced than it would have been without the Balanced Scorecard.

CIOs have known for years that they need to find ways to improve the value of IT and business investments, and demonstrate those improvements. Do you see 2003 as being a watershed year for this?

2003 and beyond is going to be an era of business analytics packages that sit on top of those ERP packages and data warehouses that companies have constructed at considerable expense—but are still not delivering punchy, decision-oriented information. Companies can implement analytical tools like activity-based costing and the Balanced Scorecard more easily because of existing infrastructure investments. It can help organizations capture the benefits from those investments. Being able to close your

books quickly and reliably isn’t creating shareholder value, but activity-based management can deliver great value.

We’ve heard a lot of CIOs talking about the value of information itself. Do you suggest any particular approach to valuing information?

Many people, particularly accountants like myself, want to apply values to intangible assets like information. The Balanced

Scorecard quantifies those assets but does not value them. I don’t think you can value intangible assets in a way that puts them on the balance sheet. Their value is contingent on their connection to the strategy and their connection to the other tangible and intangible assets in the organization. When an organization is successful, it’s because everything has been lined up. You have the right information, you have the right people with the right training, the right process, targeted customers, the right value propositions—everything works. If any one of those was not in place, the strategy might fail, and you won’t get results. In that situation, economists technically call that a joint product. I believe you can quantify the intangibles and measure their state of readiness and their capabilities. But I don’t believe you can put a meaningful financial value on them.



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Off the Shelf

Edited by Carol Zarrow

A Novel Approach

The Art of Profitability

By Adrian Slywotzky
Warner Books, 2002, \$20

The Cure: Enterprise Medicine for Business

By Dan Paul and Jeff Cox
John Wiley & Sons, 2003, \$24.95

The Five Dysfunctions of a Team: A Leadership Fable

By Patrick Lencioni
Jossey-Bass, 2002, \$22

EVERY GOOD STORY is centered around someone wanting something. Read enough dry texts on management strategies and you'll want something too—a book that



delivers its message with a little more juice. Enter the “novel for managers.” The aim of these books is obviously to make education a bit more fun. We're not talking Jane Austen or John Grisham, but three recent management “novels” do package their lessons in a palatable read.

Have a few loose links in your supply chain? *The Cure: Enterprise Medicine for Business*, by Dan Paul and Jeff Cox, takes a curative look at the enterprisewide and supply chain management woes of Essential Corp. It would help if your own CEO is as ethical as Essential's Rick Riggins—and if you also view management consultants as superheroes—but the takeaway is that great companies cannot operate as siloed fiefdoms. As an existential aside: We never learn what Essential makes, but after delving into its generic product line, we realize it doesn't matter.

The core message of *The Cure* is the whole point of *The Five Dysfunctions of a Team: A Leadership Fable*, by Patrick Lencioni. All corporate problems can be traced back to group dysfunction. If you've encountered the eyeball-roller, the know-it-all or the disconnected staring back at you from around the conference table, then you'll identify with Kathryn. She's the new CEO/heroine of Lencioni's page-turner, trying her best to corral her disgruntled executive team toward higher functioning.

Can't make enough money to afford group dysfunction? Try Adrian Slywotzky's *The Art of Profitability* approach. Disciple Steve shows up for weekly sessions with a

CIO Best-Seller List

5 What's Next? Exploring the New Terrain for Business
By Eamonn Kelly and Peter Leyden
Perseus Publishing, 2002

4 Leadership
By Rudolph W. Giuliani
Miramax Books, 2002

3 Primal Leadership: Realizing the Power of Emotional Intelligence
By Daniel Goleman, Richard Boyatzis and Annie McKee
Harvard Business School Press, 2002

2 Execution: The Discipline of Getting Things Done
By Larry Bossidy and Ram Charan
Crown Publishing Group, 2002

1 Good to Great: Why Some Companies Make the Leap...and Others Don't
By Jim Collins
HarperCollins Publishers, 2001

SOURCE: DATA FROM DECEMBER 2002 AND JANUARY 2003. COMPILED BY POWELL'S BOOKS, PORTLAND, ORE.

guru who dispenses sage advice and assignments. The idea behind this is for *you* to do the reading and homework so that *you* will gain a Zen-like insight into profit. It seems like a lot of work, but consider the results. Profit? Hey, I want some of that.

—Janice Brand

What They're Reading

Gene Elias, vice president of IS/IT at Quiksilver

The Deadline: A Novel About Project Management, by Tom DeMarco (Dorset House, 1997)—“Essential for anyone just getting started in project management, especially software projects with multiple work teams”—and *The Goal: A Process of Ongoing Improvement*, by Eliyahu M. Goldratt and Jeff Cox (North River Press, 1992)—“Even though this is a ‘story,’ it really gets to the heart of process improvement.”

Lee Lichlyter, vice president and CIO of Butler Manufacturing Co.

Necessary But Not Sufficient, by Eliyahu M. Goldratt (North River Press, 2000)—“An easy but very good book for anyone considering an ERP or major software investment.”

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IT'S A GOOD BET that end users at your company will create Internet bandwidth spikes on March 20 and 21, when the men's NCAA basketball tournament tips off with 32 first-round games starting during business hours. This annual hoops event—big business for CBS and its new 11-year, \$6 billion TV contract with the NCAA—is a huge deal for sports websites that offer online updates for the 64-game, 65-team tourna-

ment that ends April 7.

At SportsLine.com, they're ready for a full-court press. The website's team projects peak demand, and then builds systems designed to handle twice the traffic, says Peter Pezaris, president of operations and product development for the Fort Lauderdale, Fla.-based website. (CBS owns an equity stake in SportsLine.com and heavily promotes it during broadcasts.)



SportsLine.com's Linux-based system uses a proprietary live-publishing system that updates scores automatically. "We can deliver basketball scores as quick as six seconds after the actual events," Pezaris says. In this tournament, six seconds can be the difference between moving on or going home.

—Tom Wailgum

OLYMPIC GAMES I.T.

The Athens Integration Decathlon

ATHLETES PREPARING FOR the 2004 Summer Games in Athens, Greece, are deep into their training regimens. And 3,850 IT staffers are also racing against time to finish setting up approximately \$375 million of computer and communications systems to run the show. "The key word is testing, testing, testing," says Claude Philipps, chief technology integrator for New York City-based Schlumberger, the games' main IT sponsor and systems manager. "We don't have the luxury to push back, even for good reasons."

To create a real-world testing environment, ATHOC (Athens 2004 Organizing

Committee for the Olympic Games) and Schlumberger officials built a 1,000-square-meter Integration Lab, set up at the committee's headquarters in Athens. The lab, which became operational last November, contains 37 cells, with one cell dedicated to each venue. Each cell is a precise replica of the systems at each of the 35 competitive venues for the athletic events. "There are also eight to 10 system cells where we do stress tests," Philipps says.

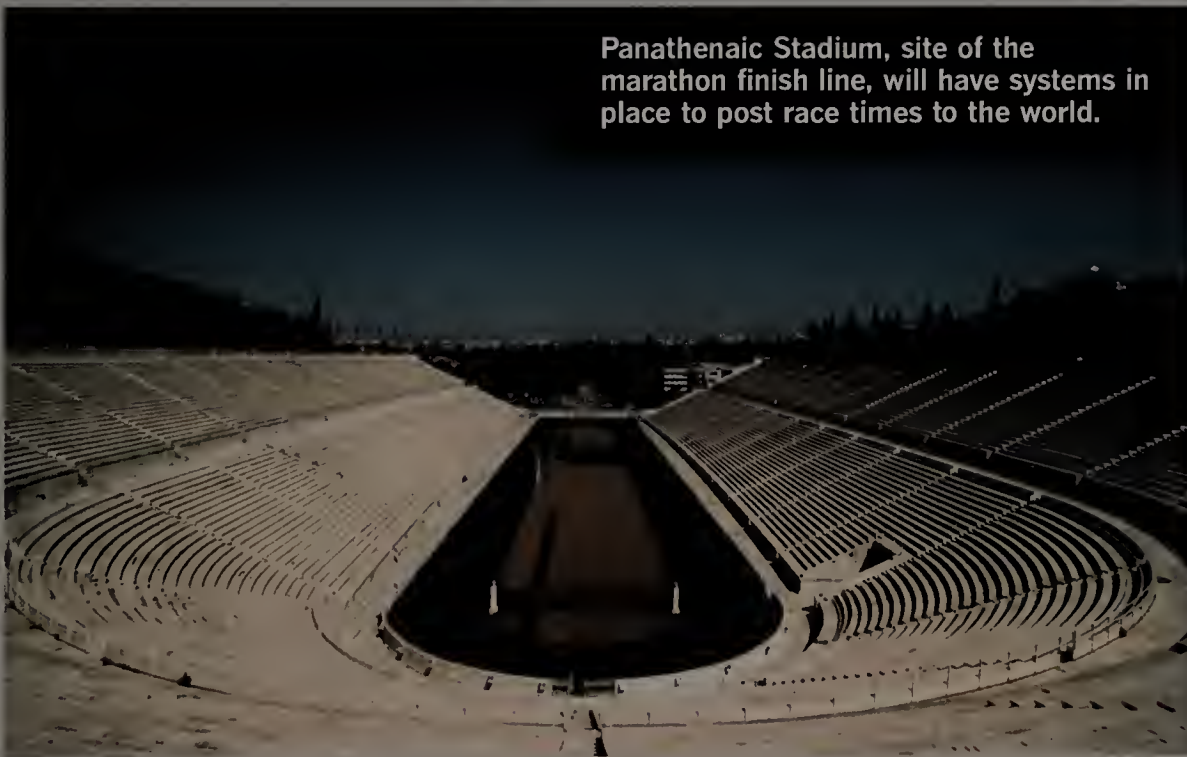
All technology used to run the games will be tested in the Integration Lab. This includes an estimated 11,000 PCs, 2,400

intranet terminals, and communications and networking equipment to support 36,000 phones, 9,000 two-way radios and the ability to check 200,000 accreditations for athletes, officials, media and spectators. A consortium of 10 vendors is involved, and testing covers interfaces between applications, all system functions and "homologation testing" to ensure systems adhere to the different sports federations' rules.

In all, Philipps estimates his staff will conduct more than 200,000 hours of testing. Systems for swimming and weightlifting were the first put through the testing process. (And though Philipps doesn't say so, testing is a good idea. Technical snafus at previous Olympics, such as the 1996 Atlanta games, were public embarrassments for past sponsor IBM.) Because the IT group for Athens plans to reuse as much equipment and staff as possible from the 2002 Salt Lake City winter games, the IT budget for the Athens games is about \$75 million more, even though the summer games are more than twice as big.

The effects of Schlumberger's work in Athens will last long after the closing ceremonies. Officials like Yannis Pyrgiotis, Athens 2004 executive director, say that a big technology upgrade was a main reason for the country's Olympic bid. Turns out they want the Hellenic telecommunications network to work faster than it did the last time Athens hosted the games. —Lafe Low

Panathenaic Stadium, site of the marathon finish line, will have systems in place to post race times to the world.





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Total Leadership

Honestly?!

Ethical behavior isn't easy, just essential. Here's how to run an honest organization and be an ethical leader.

BY PATRICIA WALLINGTON

HOW DID WE ever get from George Washington's "I cannot tell a lie" to "I refuse to testify"—the Fifth Amendment invocation that so many executives have hidden behind recently? From the criminal behavior of the Enrons and WorldComs to the political campaign ads filled with lies, half-truths and distortions to puffed-up résumés and cheating on income taxes, the pervasiveness of this integrity deficit is astounding. In a *USA Today* survey, 82 percent of CEOs admitted lying about their golf scores. Some might say that is insignificant in the overall scheme of things, but it is a small window into the character of those CEOs. The probability that golf cheaters are also business cheaters is high. Little by little we lower our standards so that what was unthinkable yesterday becomes acceptable today and rewarded tomorrow.

A sense of fairness should make us cautious, lest we paint everyone with one brush. Many companies, executives, politicians and others are exemplars of integrity. Nevertheless, everyone can benefit by brushing up on ethics. Begin by looking in the mirror. Where would you place yourself on the integrity scale? Honestly?



Ethical Leadership

Good leaders have ethics, character and integrity. Ethical leaders are self-confident, not self-centered. People will deliver an extraordinary performance for a leader they trust. You've seen it in a winning athletic team, a successful project or a profitable business venture, where teamwork built on trust and mutual respect accomplishes the common goals.

Consider, then, the consequences for business of the current negative perceptions. In a CBS poll taken in fall 2002, less than one-third of the respondents said they believe most CEOs are honest, 79 percent said questionable business practices are widespread, and more than two-thirds said they think CEOs are commonly compensated illegally. Employee distrust becomes the *business* issue. Unremedied, it will threaten our future competitiveness.

Skeptics may say that in the "real world" we are led by the

Total Leadership

manipulators. Undeniably, some leaders will fit that description. In the short run they may be successful, but inevitably most will suffer the consequences of their actions. Ask yourself whether this is what you aspire to. Is this how you want to lead—and be led?

To operate an ethical organization, you have to create an environment for your people that allows them to operate in an ethical manner.

Set the tone. The character of the leader casts a long shadow over his organization and can determine the character of the organization itself. What you do, how you do it and what you say will set the tone for your employees and create the boundaries of acceptable behavior. The values you profess must be aligned with the behaviors you demonstrate.

Establish and enforce policies. Set policies appropriate for your organization. Communicate them regularly, and adhere to

Consider the consequences for business of current negative perceptions. Employee distrust becomes the *business* issue. Unremedied, it will threaten our future competitiveness.

the corporate policies already in place. Show zero tolerance for ethical violations. Without a demonstration of real consequence, policies are useless. If we shrug and accept unethical behavior as OK “just this once,” then it becomes more common.

Educate and recruit. Consider using a formal education program to enhance the understanding of and commitment to integrity. Find universities that have incorporated business ethics in all courses, and make them a prime recruiting source.

Separate duties. This is a classic organizational concept that needs to be reinvigorated. For example, are your financial systems maintained outside the finance department?

Reward ethical conduct. The reward system is a large window into the values of an organization. If you reward a behavior, people will do it.

Eliminate undiscussables. Perhaps the most important thing you can do is instill the belief that it is OK for your employees to question what happens above them. Doing away with untouchables shines a cleansing light of openness and promotes trust.

Personal Ethics

What can one person do to alter the ethical landscape? I believe every person can make a difference. CIOs have a great opportunity to demonstrate moral leadership through their personal behavior and through the environment they create for their staffs.

Here are a few of the everyday situations that have the poten-

tial to pose ethical dilemmas for CIOs:

- Maintaining independence in vendor relationships against the pressures of personal bias, demands for reciprocity, and offers of gifts, giveaways or stock ownership.
- Maintaining the integrity of company databases in the face of requests to use the data inappropriately.
- Ensuring that the necessary security and controls are incorporated and maintained in application systems despite pressures to reduce costs.
- Providing truthful information on the status of projects, budgets and profits even when there are problems.
- Standing firm on a decision despite its unpopularity.
- Reporting suspected unethical behavior of others despite personal discomfort.

The first item of importance is to recognize that you have an ethical dilemma. First, ask yourself whether this is the start of a slippery slope to ruin. Once a person crosses the line ethically—no matter how innocuous (remember the golf scores)—it becomes easier to slide on the bigger issues. Second, would you like to see this decision or action on the front page of *The Wall Street Journal* tomorrow morning? If not, then you may want to rethink your decision.

Temptations come in many forms. There is the inner voice that whispers, “Everyone does it,” “Just this once won’t hurt” or “No one will ever know.” There is also the person who tells you, “Forget we had this conversation.” Tune out those inner voices. Think of the values you espouse and match your behavior to these values.

What should you do when you observe an illegal or unethical act? Do you ignore it, confront the culprit or report it? Taking an action in these instances is crossing the Rubicon. There is no going back. There can be some negative consequences to whistle-blowing. Maybe you lose a friend, a bonus or even a job. But doing what is right lets you sleep at night and not have to constantly look over your shoulder fearing discovery.

Ethical behavior is tough. It takes courage to stand for the truth. I think of Coleen Rowley, the Minneapolis FBI agent whose whistle-blowing letter called out some FBI shortcomings that may have led to the 9/11 tragedy. A colleague of hers said, “She always does what is right, even when no one is watching.” Think of that when you need a little courage. Let me leave you with words of wisdom from Thomas Jefferson: “In matters of style, swim with the current; in matters of principle, stand like a rock.” **CIO**

Have you faced difficult ethical decisions? Write us at leadership@cio.com. Before retiring in 1999, Patricia Wallington was corporate vice president and CIO at Xerox. She is now president of CIO Associates in Sarasota, Fla.



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Michael Schrage | Making IT Work

It's All About the Execution

Build the Business Case

Extracting value from the customer's customer is no easy task

CIOs HAD BETTER BE ABLE to swiftly implement effective IT solutions for their companies' customers. Fail at that and you're fired. But strategically savvy CIOs recognize that future rewards will come from implementing effective solutions for their customers' customers. Think of it as CCRM—customer's customer relationship management.

That's precisely the implementation challenge confronting Ticketmaster CIO Sean Moriarty. Los Angeles-based Ticketmaster is, of course, the world's largest and most technologically intensive ticket vendor. It has two customer sets—the people who actually buy the tickets, and the stadiums, venues, teams, leagues, bands and acts that want to sell them. I was struck by a comment Moriarty made about what most worried him as CIO.

His real management problem, he says, isn't the technical execution of innovative ideas but convincing Ticketmaster's best customers to give him access to their best customers. Ticketmaster wants to serve both. For example, when Ticketmaster sells tickets to a Knicks game at Madison Square Garden, it would also like to book dinner for that customer at a restaurant near the Garden.

The catch is that there may be ticket-sellers that don't want Ticketmaster to drive their businesses. While ticket buyers—the customer's customer—might be quite happy to obtain discount dinner coupons along with pregame reservations at a nearby restaurant, such offers could cut into lucrative concession sales at the sporting event. And that would make the venue very unhappy. That creates a classic channel conflict. How should Ticketmaster strike a balance between investing in its customers and investing in its customers' customers?

Moriarty's CCRM conundrum transcends tickets. Virtually every company in every industry faces some facet of this conflict. Brokers might think twice about how much access a mutual fund should have to their clients. While the funds would love to market directly to the client, the brokers don't want the competition.

Network technology makes it even easier for channel conflicts—and channel opportunities—to arise. Ticketmaster has decided that future growth depends on its ability to use technology as a medium to create value with and for its customers. That means Moriarty has no choice but to invest time in persuading his counterparts at key client companies to participate in pilots and prototypes. And if that means Ticketmaster bankrolls the bulk of the development, so be it.

Money is just one reason customers are reluctant to jointly pilot new initiatives; Moriarty acknowledges that some clients are also nervous about sharing customer access. "We think we can make it sufficiently cheap and easy to get our clients on board," he says. "But you have to make more of a business case than a technical case to get them to do it."

In other words, CIOs are becoming portfolio managers of pilots. It's not enough to get their own management committees to invest in pilots, CIOs have to get customers to co-invest with them.

At this level, technical quality becomes a necessary but not sufficient condition for effective implementation. Managing the collaboration and splitting the proceeds become the dominant business issue.

Ironically, a pilot that's too successful—that is, one that cuts too deeply into a venue's profits can pose an even greater threat to a collaboration than one that fails. Unambiguous success can inspire unalloyed greed. Were Ticketmaster to sell Bruce Springsteen albums online as well as concert tickets, the promoter and the record company would be furious with the middleman for stepping on what they consider their turf.

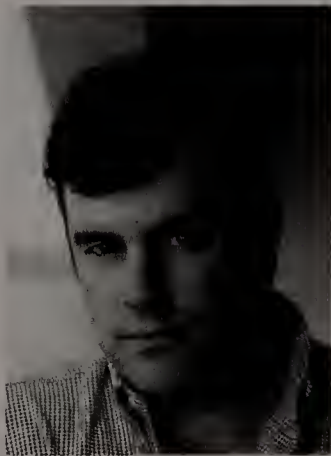
So unless the business incentives are perfectly aligned—such as, we can't do it without them and they can't do it without us—collaborating on a good idea will prove easier than implementing a great one.

The rise of networked pilots, supply chains and channels has to bring a greater level of transparency to the business enterprise. If you want your partners to be more open, you have to be more open. So at the very least, Ticketmaster would have to let a Madison Square Garden know how many people took advantage of that dinner promotion.

"When business goes online, transparency should be your friend," Moriarty says. "If it isn't, you're screwed."

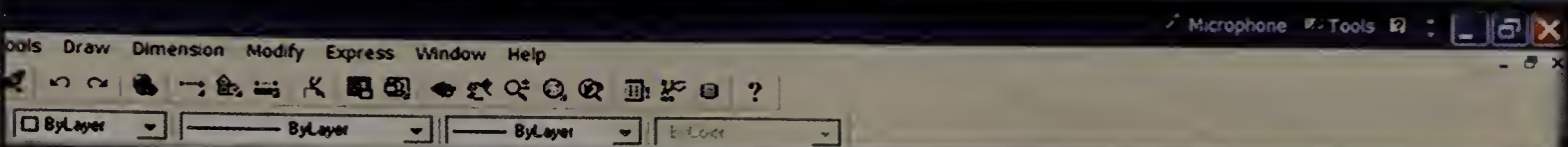
He's right. The key to successful piloting with partners will be making it easier for everyone to see how the benefits of collaboration will outweigh the costs. CIOs simply can't serve their customers' customers in the dark. **CIO**

Michael Schrage is codirector of the MIT Media Lab's eMarkets Initiative. He can be reached at schrage@media.mit.edu.

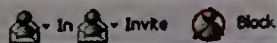




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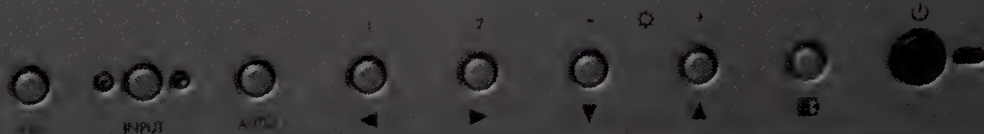
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CXO Perspectives

Views from the Executive Suite

The Importance of Being Influential

Schneider National's CEO says IT is too important to business today for the CIO to be seen but not heard

BY CHRIS LOFGREN

IN THE PAST 10 YEARS, the CIO position has gone through a remarkable transformation, moving from the computer room to the boardroom. While that transition is well under way in most companies, it's still too early in the process to declare it complete. Many CIOs are still figuring out how their IT departments can best contribute to the business's goals and how they can best make their voices heard at the top rungs of the corporate ladder.

To help them climb into their new role, today's CIOs require boardroom skills. The expanding role of information technology as a key business enabler demands that a CIO possess management, communication and sales skills, in addition to technical skills. Today, successful businesses view technology strategically. Where IT was once off in a glass room somewhere—removed from the business—it now has a seat at the leadership table.

In light of the broader strategic role CIOs are playing, I believe three executive skills have become particularly important for CIOs to master: networking, influence and business acumen.



Network for Success

I don't mean the Ethernet variety, but the old-fashioned practice of being well-connected inside and outside the company. In the bad old days, IT staffers just did things on their own, sometimes telling the other departments, sometimes not. The thinking was that their business counterparts wouldn't understand what they were doing anyway, so it seemed easier to just do it. But to be effective today, the CIO has to be highly visible and in regular contact with key members of the business, holding discussions about the needs of the enterprise, planning for the future, setting expectations, showing value and demonstrating ROI for existing projects. You can't be credible if your core constituency—the business leaders that rely on IT—views you as an outsider.

For the CIO, those face-to-face encounters with business leaders create opportunities to position the IT group for a role in determining the company's strategy. Visibility and ongoing

ILLUSTRATION BY CAREY SOOKOCHEFF



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communication are the catalysts for effective networking. The discussion about IT strategy and direction is no longer a monologue but a complex dialogue that can take place only if the CIO is viewed as an authority on and an adviser to the business.

Because of the increasing importance of electronic connec-

Typically, the IT steering committee is designed to give business and IT a forum in which to jointly set IT strategy, goals, budgets and priorities. This careful alignment of IT projects around business goals ensures that the right projects get done for the right reasons—which is especially important in times when the capital investment climate is tight, as it is at most companies.

To be effective today, the CIO has to be highly visible and in regular contact with key members of the business, holding discussions about the needs of the enterprise, planning for the future, setting expectations, showing value and demonstrating ROI for existing projects.

tions to trading partners, suppliers and customers, the CIO plays an important role in vendor and partner relations. External networking includes being part of sales presentations to key customers and prospects. More and more, there is a technology component to every customer relationship, and large customers seeking to make long-term strategic commitments to your company want to get a clear picture of the people running the IT department. They want to know you.

Your Leadership Toolkit

Many CIOs don't have a lot of experience guiding a group of people that cannot be compelled to follow—in this case, business leaders. The crafting and articulation of a vision and the process of getting business-unit buy-in into the picture you're painting requires the ability to influence thinking. Influence comes from some pretty basic activities, including active listening, asking questions, honestly working through difficulties and focusing

on the needs of others. In other words, by being a good partner and developing solutions that work for your internal customers, your influence grows. It is a byproduct of a successful and mutually rewarding working relationship.

The IT steering committee—now a staple at many organizations—is a great example of a tool CIOs can use to provide a new level of leadership and influence.

Your Business Vocabulary

The third executive skill a CIO needs to develop is the financial acumen and perspective that will enable her to fully engage in the business decisions that drive the company's bottom line. The CIO should never forget that IT earns the right to spend the company's money by doing the right thing for the business. But the CIO must also be able to make business leaders

understand that technology is not a current-period performance enhancement and that there is no such thing as a short implementation cycle.

The CIO should also be at the forefront of demonstrating how investments, new applications and infrastructure can translate into financial benefit to the organization. Business and technology leaders often view IT very differently, with the former seeing only the cost and the latter focusing on the value of IT. Demonstrating value for a particular project is not solely the job of IT, however. Both the CIO and business leaders must be willing to measure and account for the value.

Most businesses have only just begun to scratch the surface of technology's ability to improve margins and productivity, and extend the customer relationship. As the IT and business processes become more intertwined, companies will continue to look to technology for strategic advantage.

It used to be that the CIO's career was defined by his technical competence. Today and in the future, a CIO's role and success are defined by the skills of networking, influence and business acumen, in addition to the traditional accountability for delivering the technology vision and strategy. By diligently tying IT investments to business goals and strategy, CIOs can ensure that their companies understand and appreciate technology as a resource that can be leveraged for competitive advantage. As they succeed in that mission, the role of the CIO will continue to evolve and grow in stature and importance. **CIO**

Want a CEO's perspective on a specific topic? Tell us at cxoperspectives@cio.com. Chris Lofgren is president and CEO (and former CIO) of Schneider National, a \$2.4 billion provider of transportation and logistics solutions.



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YOUR OPEN SOURCE PLAN

BY CHRISTOPHER KOCH

When KB Toys VP of IT Tom Jeffery sent out an RFP for a new software system to run his company's cash registers, the only systems that met all his requirements were written in Java...and ran on Linux.



Once a toy for geeks, open source is slowly but surely filtering into the enterprise and transforming the way software is designed, sold and supported. And any CIO without an open-source strategy in 2003 will be paying too much for IT in 2004.

Until recently, Tom Jeffery didn't give a damn about open-source software.

What concerned him was finding 10,000 new cash registers (essentially PCs with cash drawers) for 1,300 KB Toys stores and a new software system to run them because his old vendor was going to stop supporting the system he had.

But then a funny thing happened. "We sent out final [RFPs] to six vendors and narrowed it down to three," he recalls. "The only thing they had in common was they were all written in Java. And ran on Linux."

To Jeffery, vice president of IT for the Pittsfield, Mass.-based toy retailer, it didn't matter what OS the new system used. What mattered was having a simple user interface, the ability to integrate with multiple systems inside KB Toys and the flexibility to modify the systems without relying on a vendor to do the job. The only registers that had all of that used GNU/Linux, the operating system built piecemeal over the Internet by a community of volunteer developers.

Jeffery was vaguely aware of the roots of this community, how it began in 1984 when a cantankerous software programmer named Richard Stallman wrote some brilliant software designed as an alternative to the Unix operating system. It was software that anyone could use and change and distribute—as long as he promised to share any changes he made with everyone else. In 1991, a Finnish college student named Linus Torvalds added a complex kernel to Stallman's and others' programs to instruct them to act as the unified operating system that most have come to associate with Torvalds' pet name for the project, Linux.

Jeffery didn't start caring about any of this until 2001, when he was forced to.

He didn't care because for years open source has been dismissed as pie-in-the-sky, a toy for geeks. But today open source is undergoing a business revolution.

In a November 2002 *CIO* survey of 375 information executives, 54 percent said that within five years open source would be their dominant server platform. Today, major enterprises are running mission-critical functions on open source, big vendors have lined up to support it, and reliable applications have emerged.

Reader ROI

- ▶ How the commodification of software is driving the open-source movement
- ▶ Which areas of enterprise IT are primed for open-source transition
- ▶ Why the major vendors are climbing on the open-source bandwagon

And CIOs who have implemented it report huge total-cost-of-ownership (TCO) reductions.

It's now clear that within five years, open source will transform how software is developed, sold and supported.

When CIOs need help with their systems and software, they don't have to depend on vendors with their own agendas because when an open-source app doesn't work, administrators can look at the source code, figure out why and write a fix themselves. If they're having trouble, help is just a newsgroup away.

So far, the community that has grown up around popular open-source applications such as Linux have proven to be highly disciplined, ethical and extremely competitive, with pecking orders that exclude—sometimes brutally and profanely—all but the best contributors. (For more on this community, see “Who Are Those Guys?” Page 57.)

“Heroism in these communities means proposing an interesting improvement and getting everyone to acknowledge it,” says John Sarsgard, vice president of Linux sales programs at IBM in Armonk, N.Y. “That’s the way these guys get their strokes—everyone recognizes that their way of doing it is the best way.” When bugs are revealed in Linux or Apache, for example, the community begins posting fixes on the Internet within hours. Their work is good, and it’s free.

Free is good. CIOs who don't come to terms with this revolution in 2003 will be paying too much for IT in 2004.

Software as a Commodity: The Apache Story

THE REASON THEY WILL be paying too much is that in effect they will be buying the vendor's research and sales and marketing expenses when they don't have to. They will be paying for support that others will be getting gratis. They will be paying for hardware that's overpriced because it uses an arcane proprietary operating system. They will be paying for bows and ribbon—for packaging—when what's inside the competing packages is essentially the same.

Open source is helping turn significant

chunks of the IT infrastructure into commodities by offering alternatives to proprietary software. (See “Enterprise Ready,” Page 56, for a list of these tested open-source applications.) This is software as corn or wheat. As the products become indistinguishable, buyers will choose the cheapest, most reliable supplier they can find—and it's hard to beat open source on price.

This commodification is happening fastest at the lowest level of the infrastructure, the level that most businesspeople never see, like server operating systems and application servers (middleware). This is not an accident: Fifty-eight percent of the open-source community is made up of professional IT administrators and programmers (with 11 years of professional experience, on average) who use open source to fix problems they encounter in their jobs, according to a recent survey by the Boston Consulting Group.

Apache, the webpage server that now runs 60 percent of the world's websites,

began this way. In 1994, there were no commercially available software packages for serving up webpages. Randy Terbush was one among many IT people casting about the Internet for solutions. He found seven others willing to work on the problem with him. “We said, Let's start a mailing list and work together,” says Terbush, who is CEO and president of The Tribal Knowledge Group, an Alta, Wyo., infrastructure technology consultancy. He was a founding member of the nonprofit Apache Software Foundation, which develops and distributes the Apache HTTP server.

Apache's release in 1996 wasn't accompanied by a million-dollar ad campaign. Analysts and the press didn't track sales because you didn't buy Apache, you downloaded it. And you could download it once, tweak it, burn it on a CD, and install your own version on as many servers as you wanted without telling anybody and without spending a dime.



PHOTO BY KEVIN MIYAZAKI

Menasha CIO Ed Wojciechowski took a daring plunge in 2000 when he switched his SAP ERP system from Unix machines over to Linux on Intel servers.

Open Source Goes Big Time

OF COURSE, free doesn't necessarily mean without costs. Just because you download open-source applications for free doesn't mean you won't have a whole host of associated costs such as maintenance, integration and support. Right now, CIOs remain concerned about receiving support for open-source software solely from volunteers—however disciplined and dedicated—over the Internet. They want commercial vendors to sign contracts guaranteeing that the stuff will work. In our November survey of 375 IT executives, 52 percent said a lack of vendor support was open source's primary weakness.

But in 2001 and 2002, major vendors such as Dell, HP, IBM, Oracle and Sun announced in various ways that they would begin supporting open-source products. IBM is leading the push. "We will guarantee the same [service-level agreements] for Linux that we do for proprietary OSs," says Dan Frye,

director of IBM's Linux Technology Center. "Response times, fix times, uptime—we'll sign all those same contracts for Linux."

Last summer, Oracle released an open-source version of its database to run on clusters of Linux servers—a popular way for CIOs to transition big, power-hungry applications and databases from expensive hardware like supercomputers and high-end Unix servers to groups of cheap Intel servers running Linux. Even Unix market leader Sun, which has the most to lose from the rise of cheap Intel server replacements for its more expensive Unix machines, now offers a Linux server. The only major vendor that continues to resist the march of open source is Microsoft, though company officials have stopped calling open source "a cancer," as they did a few years ago, and now acknowledge Linux as a viable competitor. (See "Showdown at the 6.0 Corral," Page 62.)

Vendors that have embraced open source haven't suddenly gone all soft and fuzzy. They see it as an opportunity to sell software that works with open source, as well as consulting, integration and support services. This is a major shift from a few years ago, when most vendors viewed open source as inconsequential. Now they see it as a loss leader for profitable services.

The strategy shift by the big vendors has opened the eyes of big company CIOs. "The way [open source] has been accepted and embraced by the IBMs and Suns has put it on our radar screen," says Judith Campbell, senior vice president and CIO of New York Life Insurance. "I like what I'm seeing because however this shakes out, it represents a flight to quality in software."

"My operations group is really very positive about using [open source]," says Sue Unger, senior vice president and CIO of Stuttgart, Germany-based DaimlerChrysler AG. "It requires less time to manage than [proprietary software]. Answers become apparent a lot easier, and they don't seem to need as many management tools as they've needed with other environments."

All the CIOs we spoke to for this story who use open source say they've seen sav-

ings over proprietary software, even when accounting for the extra integration work required to bring open source into their architectures. CIO's survey respondents seem convinced too: 59 percent said a lower TCO is open source's primary strength.

Even if open source seems too risky to

THREE STRIKES ON UNIX

The biggest short-term market loser to Linux? Unix.

X STRIKE ONE The Unix market is shrinking as Intel-based machines, which already cost a fraction of Unix machines, become even cheaper and more powerful.

X STRIKE TWO Each of the major Unix vendors created its own proprietary, incompatible versions of Unix, locking CIOs into systems they could not change unless they bought new machines. This artificial lock-in has kept Unix hardware prices higher than they need to be.

X STRIKE THREE Linux is based on Unix, so converting Unix applications to run on Linux is relatively straightforward and Unix administrators can easily learn Linux, providing a ready base of support for CIOs who want to make the switch.

If Unix has any remaining advantage, it's that Linux can support only eight Intel processors stuffed into a single computer, while Unix can support 32 (or more) powerful RISC chips in a box. But Linux (and Windows) development is not standing still and neither is Intel's. The Unix hardware vendors, with their shrinking customer bases, will have less revenue to invest in R&D, while Intel's war chest continues to swell.

Unix? Yer out!

—C.K.

become part of your strategic plan, you should be experimenting with it, if for no other reason than to use it as a stick to keep your vendors honest. "Even if you decide you don't ever want anything to do with open source, go out and get some and show it to your vendors when they come to call," says

Jonathan Eunice, principal analyst at Nashua, N.H.-based research company Illuminata.

The question for CIOs now is not *whether* they should be using open source but where and how they should be using it. Open source will not replace proprietary software in the next few years (there aren't, for example,

enough volunteer developers with a passion for, say, financial derivatives to replace Wall Street applications today, if ever), so CIOs have to make educated decisions about where to apply open source and where to wait.

So?

What's your plan for 2003?

YOUR OPEN SOURCE PLAN FOR 2003

Start with the Web

THE INTERNET IS THE WELLSPRING of open source and the focus of many of its applications. So if you're looking to get your feet wet, it makes sense to start there.

Pete Sattler's company, SPX, a Charlotte, N.C., valve and motor manufacturer, is highly decentralized, with divisions and plants spread around the country. Its websites grew like weeds during the '90s—mostly small, low-transaction sites, each with its own Windows server. The servers and websites propagated to the point where the annual maintenance bill started to add up.

"We figured the websites would be a low-risk way to bring Linux and Apache in," says SPX's chief e-business officer and CIO. "There aren't a lot of hits or activity on these websites, and it gave us a chance to work with open source and see how it operates in a production mode." Sattler consolidated 75 websites and went

from 40 Windows servers down to four Linux servers. He hired a Linux expert to lead the project and develop an enterprise architecture for the Linux system. Sattler's expert tweaked Linux to fit SPX's needs, creating a master version of the software that Sattler can install on as many servers as he wants. For free. "I'll be able to replicate that image onto new servers as I add them," he says.

The image will help as Sattler experiments with open source in the next level of the infrastructure: the network. Open-source tools exist at varying levels of maturity for network-centric functions like management, intrusion detection, middleware and databases. "These are commodity activities," says Sattler. "I want the infrastructure to be cheap, standard, reliable and provide good performance. Linux is helping me swap out more costly components of my infrastructure, drive down my costs and increase my reliability. You want this stuff to be like an electric utility. It just runs and you don't think about it." That is, Sattler doesn't want to think about his network in tactical terms (such as bringing crashed servers back up); he wants to focus on infrastructure strategically.

The network is about as high as most CIOs are willing to go with open source right now. Even at the network level, the transition will be gradual as tools continue to mature. But Sattler says that the lowest rung on the ladder, the Web, is a lock to be turned over to open source. "We just had a security and penetration audit last month, and the only systems the auditors weren't able to penetrate were the Linux systems," he says. (Of course, now that more people are using Linux, hackers are getting better at hacking it. Everyone agrees, however, that good software is safer than bad software.)

Take Back Your Infrastructure

OPEN SOURCE FORCES YOU to get reacquainted with your IT infrastructure. It's the kit car of IT. You buy the frame and customize to your heart's content, putting, say, a Bentley grill on your VW Bug.

"Acceptance of open source depends on the CIO's personal style as much as anything," says Bob Wolf, operational director of the Strategy Practice Initiative for The Boston Consulting Group. If you don't like your people fiddling with stuff, he says,

ENTERPRISE READY

Open-source alternatives to proprietary software

PROPRIETARY

OPEN SOURCE

Web browser

Microsoft Internet Explorer, Netscape

Mozilla (based on Netscape)

Web server

Microsoft IIS, Netscape

Apache (60 percent of all websites run it)

Application server

WebMethods (includes open-source JBoss application), WebSphere

JBoss (2 million downloads in 2002); Apache Tomcat (most widely used application server)

Office Suite

Microsoft Office, Corel WordPerfect Office

OpenOffice.org (based on Sun's proprietary StarOffice)

E-mail/collaboration

Microsoft Exchange, Lotus Notes

Ximian Evolution

Database

Oracle9i, IBM DB2, Microsoft SQL Server Trial

MySQL, PostgreSQL (both currently lack the power and depth of industrial-strength Oracle and DB2)

—C.K.

you will probably wait on open source until it's plug-and-play.

"You have to *own* open source," says Ed Wojciechowski, vice president and CIO of Menasha, a Neenah, Wis.-based packaging and plastic products manufacturer. Wojciechowski did what most CIOs would only consider doing as a contestant on *Fear Factor*: From 2000 to 2001, he switched his SAP ERP system from Unix machines over to Linux on Intel servers. SAP had only just ported its applications over to Linux for public consumption during that time.

CIOs at Fortune 500 companies worry about moving their ERP applications over to Intel servers because they rely on huge databases that need lots of processing power. Unix workhorses can accommodate many more processors in each box than Intel servers running Windows or Linux. But the performance gap is narrowing, says Manfred Stein, product manager of LinuxLab and Unix Platforms for Walldorf, Germany-based SAP, the biggest ERP vendor. "The number of systems where Intel would not provide sufficient resources to run the database is very small, less than 1 percent of our installed base," he says. For that 1 percent, SAP is evaluating Oracle's RAC clustering system for Linux so that customers can simply add more Intel boxes as the databases grow, says Stein.

Wojciechowski had an ace up his sleeve for his SAP switchover: a brilliant college kid contributing code to the Linux kernel in his spare time. He started designing Wojciechowski's Linux ERP architecture as a part-time employee during the summer of 1999. Now he's out of college and working for Menasha full-time. Wojciechowski won't give his name, much less offer him up for an interview. "The whole world would come after him," he laughs.

Not that the issues in making open source work are all that esoteric. "There is nothing that gets delivered that just plugs in and everything is beautiful," says Josh Levine, chief technology officer of E-Trade Financial in Menlo Park, Calif. "So you need people who know the technology." Like Wojciechowski's prodigy.

"There's a little more onus on your IT people to reach out and provide answers rather than going back to a vendor and asking for a patch," says Harry Roberts, senior vice president and CIO of Reading, Pa.-based retailer Boscov's, which moved a legacy invoice processing app to Linux on its IBM mainframe. "But they like the new way," Roberts continues. "They don't want to wait weeks or months for solutions to come from the vendor. They want to get things done quickly."

Indeed, Roberts says his staff ported the old invoice processing app over to Linux in 45 days. Not bad, he says, considering that "it had a lot of functions and touchpoints with other systems like ERP and a rigorous online and batch cycle. We said, If we can make this work, we can make anything else work." Roberts ran the new application in a parallel environment with the mainframe system to work out bugs for four

WHO ARE THOSE GUYS?

The mysterious people designing open-source software are the same people who are working for you right now

Worried about trusting your infrastructure to a bunch of shaggy college kids who might bolt at any moment for a yearlong backpacking trip to Switzerland? Don't worry. Even if every one of them left for the Alps tomorrow, 90 percent of the open-source community would still be checking in to one of the community's Internet hangouts (SourceForge.net and Freshmeat.net are the most popular) to see what's new.

Turns out these people have real jobs—58 percent of the open-source community is made up of professional IT administrators and programmers (with 11 years of professional experience, on average), and 30 percent of them will have to answer to their bosses if they don't write open-source code. That's right: Open source is *their* job, according to a recent survey of 678 open-source developers that was conducted by The Boston Consulting Group (BCG).

The most successful open-source projects are those that solve a problem that the community's biggest constituency—IT admins—are encountering in their day jobs. "To form a successful open-source community, you have to have an overlap between people who want to solve a problem and people who have the skills to solve that problem," says Dan Frye, who leads a group of 250 IBM programmers who work on Linux full-time.

Though most projects focus on the IT infrastructure, some flock to gaps you might not expect. The open-source GIMP photo-editing software got started because Adobe took too long to build a Unix version of Photoshop. Clearly, the community isn't afraid to reach beyond its most direct areas of expertise.

That's because they are all hungry to learn. Ninety-two percent said that was their primary motivation for working in open source, according to BCG—and to write code that gets respect. In this way, the open-source community resembles the scientific research community. You rise or fall based on the quality of your contributions, and you can see everything that has already been done. "You can stand on the shoulders of others" and let their work inform your own, says Jeremy Allison, who leads development for Samba, the open-source file and print server for Windows.

But it can be brutal out there, even for the coders who have won the respect of Linus Torvalds, who flames regular contributors to the Linux kernel. "It requires the willingness to be judged by people you don't know, and that takes a thick skin," says Frye. But in the end, everyone agrees, good code always wins.

—C.K.

months before going live. "That was six months ago," he says, "and we haven't had a failure yet."

Design Your Own Desktop

DAVID CHUGG HAD A DREAM. He wanted to remove the Internet Explorer icon from the Windows desktop.

Chugg's not a Justice Department lawyer, nor does he have a particular beef with Microsoft. It's just that he didn't want reservations agents at the 6,600 hotels that are franchises of his company, New York City-based Cendant, to be surfing the Internet when they should be taking care of guests.

But, of course, everyone knows Windows won't work without Explorer.

That's why Chugg likes Linux. "It's a loosely coupled system,

so you can rip out the stuff you don't want without harming the rest of it," says Cendant's IT senior director of hotel solutions. "Don't want the Internet?" Chugg says. "Just rip it out."

Linux is supposed to be DOA on the desktop—too scattered, too feature poor to compete with Windows. But not in Chugg's world, the world of the locked-down or embedded operating system, where limited is good. This is where Linux excels. It's reliable, easily tweaked to perform specific tasks, and cheap. Indeed, when you're talking about 6,600 hotel reservation screens, the cost of putting a licensed version of Windows on each begins to add up. And Microsoft's new licensing program is adding fuel to the fire, especially among retailers that typically want to devote only 1 percent to 2 percent of revenue to IT.

Chugg, meanwhile, is upgrading his system to provide live connections into all the hotels from Cendant's headquarters, and he likes what's happened to his hotel's desktops since he first installed Linux: nothing.

"They look pretty much like we left them two years ago," he says. "We used to have to go in and clean off games and all kinds of things from the Windows machines before we could upgrade them."

The first time he went with Linux, it was because his hotel management system vendor didn't offer the software on any other system. This time, the vendor offers other operating systems, but Chugg is sticking with his original Linux system from United-Linux vendor The SCO Group—by choice.

Get Leverage! Kill Off Your Expensive (Proprietary) Hardware

FOR YEARS, Josh Levine had to settle for boring meetings with his Unix vendor, Sun Microsystems. Sure, there were some exciting times there at the beginning—back in 1998, when E-Trade was first shopping for Unix computers to run its custom online trading system. Levine could pit Sun against the other Unix vendors like IBM and HP. But once E-Trade decided to go with 60 Sun boxes at \$240,000 a pop and a \$25,000 yearly maintenance fee on each, the fun—and Levine's leverage—was gone. All Unix vendors have their own versions of Unix designed to run solely on their hardware. "All their strategies are based on proprietary operating systems. Once you buy the hardware, you can't move," Levine says.

Now, when Levine wants to buy some new hardware, he can have a party and invite everybody. That's because he replaced those 60 Sun boxes with 80 \$4,000 Intel servers (which became



With a loosely coupled system, says Cendant IT Senior Director of Hotel Solutions David Chugg, if you don't want the Internet, you can "just rip it out."

PHOTO BY STEVEN VOTE

commodities long ago; they're virtually identical no matter who you buy them from) and a commodity operating system, Linux, which is supported by all the major Intel hardware vendors. The Intel boxes are less powerful than their Unix counterparts, so Levine just bought more of them. And since Linux is based on Unix, his support people easily made the transition.

The fun is back in Levine's procurement life.

"We get to manage the vendor as opposed to the vendor managing us," he says. "Now they compete on performance and price; they can't hide behind an operating system. And we've cut out the maintenance fees we had to pay on the Unix machines. That's *huge*. That's a sea change.

"Linux is about leveling the playing field across all the hardware vendors," he says.

Levine moved to Linux cautiously. He looked over the possible savings (which he estimates at \$13 million in the first year) for a few years before leaping. Though Levine has an IT staff of 650, including 350 developers, he bought full support contracts from Raleigh, N.C.-based Linux distributor Red Hat and IBM. "It's possible that open source is supportable without a major vendor," he says. "But our feeling has been that without major vendor support, we're gambling, and there's no use gambling. So we held off until HP, IBM and Sun stepped forward and said they were going to support it vigorously."

Even with that support, Levine tested the Linux system in parallel with his old Unix system for six months before switching over in March 2002. It's run with just a couple of minor hitches since then, he reports.

At DaimlerChrysler, CIO Unger deployed Linux to kill the three supercomputers that the company uses to run crash simulations. She turned the three into 108 Intel servers running Linux, all whirring away on the crash dummies' misfortunes.

"We expected cost savings, but we were surprised at how big they were: 40 percent for hardware, software and service combined," she says. But then Unger saw something she didn't expect: an application performance improvement of 20 percent. "Everyone thinks you just do this because of cost reduction, but we're seeing other factors." Besides improved performance, the machines are simpler to manage. Based on the U.S. experience, Unger did the same thing to DaimlerChrysler's Mercedes crash simulation center in Germany, with the same results.

Free at Last... Well, Not Yet

IF THERE'S A ROADBLOCK to universal open-source adoption, it's the lack of industrial-strength enterprise applications to run on Linux, things like CRM and ERP. But the difference in 2003 is that CIOs are demanding to know what the vendors are plan-

GIVING BACK TO THE DEVELOPERS

If open source saves you money, push the button

If you go to the bottom of most well-established open-source software websites, you'll see something unusual: a button for making a donation.

"You have to water the garden," says Randy Terbush, a founding member of the nonprofit Apache Software Foundation. "You're saving dollars by utilizing this development community, so you need to treat it as if it's an important part of your business. It's in your best interest to give something back—whether it be financial support or engineering support—to help extend the platform you depend on." —C.K.

ning to do about that. They didn't much care before.

"In the last year, interest in Linux has taken off like a rocket," says SAP's Stein. "We just passed 1,000 customer installations on Linux [out of 13,000], and we expect about 5 percent of new deployments to be on Linux."

SAP was the first major ERP vendor to offer its software on Linux, and all the others have now pledged to do the same. As always, pledges are one thing, delivery another. But with continuing pressure from customers to lower

implementation costs, all major software vendors had better start coming through.

For CIOs, this is the year to start figuring out what to do with open source—even if it is nothing. Don Bullock, vice president of IT at Eaton, the Cleveland-based diversified industrial manufacturer, had his advanced technology group do two pilots with Linux last year: one on the mainframe platform and one to use Linux as a locked-down operating system for a voice recognition application on an Intel platform. He decided the incremental expenses of establishing a new OS (retraining IT staff and users, buying and integrating new hardware) was too great—for now. "But we're going to keep looking at it," he says.

Art Huffman, CIO at Halliburton, a Dallas-based oil field services company, has also looked at Linux, and he came to a different conclusion. He plans to move 13,000 users of his company's SAP system over to Linux in the next two years.

"We're looking to move to a clustered Linux/Intel platform to run the Oracle database," he says, "and we think the technology will be there. It isn't today. But it looks like the pieces are coming together."

Huffman has an open-source plan.

Do you? **CIO**

CIO.com Thanks to Microsoft's Licensing 6.0 scheme, open source is on CIOs' radar screens. Is Microsoft driving you to Linux? Share your views in **TALK BACK** at comment.cio.com/talkback.

If you have experience with enterprise-level, open-source computing to share, contact Executive Editor Christopher Koch at ckoch@cio.com.

Once upon a time,
there was a company in danger
of getting left behind. Customers
were demanding more service. Customization.
More value. So they bought a Time Machine. Flick a switch,
and they could go forward in time – and understand what their customers were
going to need before they actually needed it. With another button they could go
right back in time and undo integration snafus. They could catch up. They
were *jazzed*. Just one problem: the Time Machine was a flop. It didn't work.

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Highly customized, thoroughly personalized service is here. IBM can prepare you for
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Showdown

For all its warring with competitors, Microsoft's relationship with its corporate customers had been relatively peaceful. Until October 2001. That's when Microsoft's new licensing scheme started going into effect.

Redmond's decision to shift from a business plan that let its corporate customers decide when to upgrade each PC or server to a subscription plan that exacts a yearly fee for the software—whether you upgrade or not—has fueled a new kind of anger.

It's a dangerous kind of anger, the kind that flares up when you think you've lost control over something that was once yours.

Of course, CIOs long ago ceded control over the desktop to Microsoft, but they held on to the power to decide when and how they would upgrade. And they had the leverage to negotiate on price when they did. The new scheme, called Licensing 6.0, requires enterprises to buy a two- or three-year subscription that covers any number of upgrades. Those who don't buy a subscription can still buy individual licenses, but they'll pay the full license price the next time they want to upgrade.

Microsoft defends the plan by saying that it simplifies its old byzantine pricing structure, which customers had complained about. Customers say simplicity is fine—but

not at the cost of control.

Reader ROI

- ▶ How Microsoft's Licensing 6.0 is still meeting resistance from the CIO community
- ▶ Why CIOs are looking at open-source alternatives to Microsoft

Anger about the new licensing plan reached a fever pitch in late 2001, when 15 percent of 122 respondents to an October 2001 *CIO* survey said they planned to sign up (see "The Meter Is Run-

at the

In a 2001 *CIO* survey, 85 percent of the respondents said they weren't going to sign up for Microsoft's new subscription plan. Our latest survey shows that more than half have stuck to their guns. That's because a new factor has entered the equation: choice. Now CIOs have it.

BY CHRISTOPHER KOCH

Corral

ning," www.cio.com/printlinks). More than a year later, that anger is still simmering, even in customers that went with the new program.

"We caved," says Tom Jeffery, vice president of IT at Pittsfield, Mass.-based retailer KB Toys, who estimates that KB will pay \$135,000 per year more for Microsoft products under the new plan. "We felt strong-armed into doing this. But because we don't have any other option, we felt we just had to play the game."

But many still aren't playing. Though Microsoft's deadline for customers to sign up for the new licensing plan passed at the end of July 2002, by November a new CIO survey of 375 IT executives found that 51 percent of respondents still had not upgraded to Microsoft's new product line, XP. Now, if they do, they'll have to pay the full price, even if they already have older versions of Windows software.

WHO WOULDN'T BE ANGRY?

Anger used to be a wasted emotion when it came to the colossus of Redmond. You had no choice, so you paid your money and you moved on. But this time Microsoft's high-

handedness, combined with an intensely cost-conscious economic environment, and the arrival of an increasingly viable competitor in GNU/Linux and other open-source software products (see "Your Open-Source Plan," Page 52), has encouraged CIOs to dig in their heels. Judging from the CIO survey and our interviews with respondents and others, many CIOs have chosen to play chicken with Microsoft.

They're freezing their Microsoft infrastructure investments and buying new licenses only as needed, waiting to see if in the next few years Redmond blinks.

Sixty percent of respondents to the latest CIO survey said they decided to begin using open source as a direct response to Microsoft's new licensing plan.

"Linux is absolutely a competitor to Windows—no question."

—JIM ALLCHIN, GROUP VP FOR PLATFORMS, MICROSOFT

A year ago, no bookie in his right mind would have given odds on that. But in 2003, the bet that Microsoft will give in on licensing terms or price or both has made the leap from no-hoper to reasonable long shot. And that's good enough for many CIOs, low on resources and unimpressed by Microsoft's latest offering, to take that wager.

MICROSOFT'S BIG SQUEEZE

Microsoft's new plan isn't unusual. Big ERP and CRM vendors make their customers pay a yearly subscription fee—typically 10 percent to 22 percent of the license price—when they buy the software. For that, they get free upgrades and support. But Microsoft's take is higher—29 percent of the license price per year, according to Gartner. Indeed, cost is a big factor in CIOs' anger. Even if you signed up for Licensing 6.0 before the deadline, chances are you're paying more than you did before. The fare hike depends on how often you like to upgrade your computers, according to Gartner. If you're accustomed to dumping things every three years, you pay at least 50 percent more; four years and it's 100 percent more for desktop and server software. Microsoft's calculations say that 20 percent of customers will pay more, 50 percent will see no change and 30 percent will actually pay less under the new plan.

No matter whose numbers you believe, it's clear that the new plan favors companies that upgrade more often. But in these economic times, CIOs are less likely than ever to upgrade. Especially since analysts and CIOs alike call XP at best an incremental improvement over Windows 2000. And most corporate customers haven't even gotten that far yet. Most are just now considering upgrades from Windows 95 (which Microsoft stopped supporting in 2001) and Windows 98 (support ends in June 2003), says Gartner. There's a pattern emerging

here that CIOs don't like: Microsoft's upgrades have become more frequent and more incremental over the years, just like the other major enterprise software vendors.

Kathy Tamer, vice president and CIO of United Space Alliance, the Houston-based prime contractor for the space shuttle program, has a timetable for upgrading her company's 10,000 desktop computers that doesn't match Microsoft's. "We upgrade the desktop every three to four years and the operating system every four to five," she says. "That gives us time to get everything stabilized and gives us the best return for our investment."

Tamer is in the process of upgrading to Windows 2000 from Windows 95 and 98. She purchased all the licenses before the new plan came along and is rolling out the new stuff as she buys new machines, turning over about 25 percent of the machines per year. She is a fan of Windows products in general, she says, but saw no reason to sign up for the subscription plan simply to hedge her costs on a future upgrade. "With our timetable, it made no sense to go with the new plan," she says. "The price to us was going to be \$3 million, and we had four months to pay [before the deadline]. We told Microsoft to go pound sand."

Larry Shutzberg, CIO of Rock-Tenn, an Atlanta-based packaging maker, is hoping to go even longer until his next upgrade: four to six years. Shutzberg skipped an entire generation of Microsoft's desktop soft-

"I used to have Lotus 1-2-3, but Microsoft cost less so I bought it. Now I look around for competitors, and I don't see any."

—LARRY SHUTZBERG, CIO, ROCK-TENN

ware suite, Office, sticking with Office 95 until finally moving to Office 2000 in 2001. Even then, he saw no significant feature improvements that warranted the move. He did it, he says, because his customers did it and started sending Rock-Tenn Office 2000 documents that his businesspeople couldn't open with Office 95. "There have never been real business drivers to upgrade," says Shutzberg. "The only drivers have been compatibility issues."

Shutzberg says it would have cost Rock-Tenn \$2 million to sign up for the new licensing plan for its Microsoft infrastructure, which includes 2,500 desktops. "That's cost prohibitive," he says. "That's why we're going cold turkey on Office 2000. Office 11 [the next version of the productivity suite] is nice, but not to the tune of \$2 million. I love their products, but I can't stand that my hands are tied behind my back."

He admits, however, that he and his colleagues had a hand in tying the knot. "They got us used to paying low amounts for this stuff, and we all went along," he says. "Now they want more, and we don't want to pay. I used to have Lotus 1-2-3, but Microsoft cost less so I bought it. Now I look around for competitors, and I don't see any. With their predatory pricing, they've killed everyone who could've offered us an alternative."

OPEN SOURCE AS LICENSE 6.0 KILLER

Well, not everyone. Microsoft may have killed off its traditional competition, but it has been unable to eliminate a pesky threat that is immune from pricing pressure: open-source software. The movement that began as a hobbyist effort to create a free alternative to the Unix operating system has grown to become a threat to all pieces of Microsoft's business: the server, the desktop, the Web. Viable and free, open-source alternatives now

exist for the products that constitute at least 70 percent of Microsoft's revenue: a desktop and server operating system in Linux, an office productivity suite in OpenOffice.org's OpenOffice, and an e-mail client and server in Ximian's Evolution product. After long dismissing Linux, top Microsoft executives now acknowledge the threat. "Linux is absolutely a competitor to Windows—no question," says Jim Allchin, group vice president for platforms at Microsoft.

How much of a competitor remains to be seen. Most big company CIOs are so heavily

"The price to us was going to be \$3 million, and we had four months to pay before the Licensing 6.0 deadline. We told Microsoft to go pound sand." —KATHY TAMER, CIO, UNITED SPACE ALLIANCE

invested in Microsoft that few are considering switching wholesale to open source. Like angry, jilted lovers who can't bear to separate, CIOs are looking to open source not as a replacement but because they want to make Redmond jealous. "I read an article about OpenOffice this morning," Tamer says. "I'm considering my options."

"This puts open source on my radar screen," says Tom Shelman, CIO of Northrop Grumman, a Los Angeles-based defense contractor and shipbuilder. Indeed, 60 percent of respondents to the latest *CIO* survey said they had decided to begin using open source as a direct response to Microsoft's new licensing plan.

Shelman is considering open source reluctantly, he admits. But he feels trapped because he could not create a business case to justify signing up for Microsoft's new licensing program. He tried, but his IT staff found that the licensing plan could increase the cost of an upgrade 60 percent more than in the past. "If you're going to increase the license cost, you have to look at three things to balance it," Shelman says. "Will the support cost go down? Does it increase functionality? Does the ability to use it let you win more business? Right now, I can't demonstrate business value for doing it based on those things."

So in December, Shelman, who controls 100,000 desktops at Northrop Grumman, made a decision that could represent a turning point for Microsoft. He decided he needed an alternative. "We decided to explore whether it's feasible to move a \$25 billion company onto open source," he says. He has no problem with Microsoft software, he says, nor is he at all sure whether open source can work, but if it can demonstrate more business value than what he's using now, he'll consider it for part of his desktop population.

"We don't chase the latest release of anything," he says. "For any type of software, you have to ensure that what you're doing is adding value. You can't automatically pay just because a vendor raises prices or changes strategy. You have to think carefully. The reason costs were spiralling out of control for years was CIOs said, Hey, we gotta buy the new stuff."

Peter Houston, Microsoft's senior director of server strategy, says Microsoft will not give up the new licensing plan, although last month it extended some support provisions for NT Server 4.0 through 2004. Nor will it give away its software—as some analysts have speculated it will. But it is reasonable to speculate that if the company begins to feel enough pressure—from open source, from its customers, from the economy—it will respond. Most likely, Microsoft will simply drop its prices to meet or beat any perceived cost advantage that emerges from Linux and open source.

And that could mean that those who have taken the bet against the new licensing plan might wind up with something to show for their troubles. **CIO**

If you have a strategy for responding to Microsoft's licensing plan, you can share it with Executive Editor Christopher Koch at ckoch@cio.com.

CIO.com Is Microsoft driving you into the arms of Linux? Share your thoughts—both pro and con—at **TALK BACK**. Go online to comment.cio.com/talkback.

CIGNA'S SELF-INFLICTED WOUNDS

A cautionary tale about the perils of IT transformation and the dangers of counting your chickens before they hatch BY ALISON BASS

CIGNA CIO ANDREA ANANIA LOOKED OUT AT 250 PEERS AT AN OCTOBER 2001 CONFERENCE

in Rancho Mirage, Calif., and declared that she had successfully reengineered her company's IT. These days, she said, projects are completed on time and within budget.

Anania spoke too soon.

Four months later, in January 2002, Cigna HealthCare's \$1 billion IT overhaul and CRM initiative went live in a big way, with 3.5 million members of the health insurance company moved from 15 legacy systems to two new platforms in a matter of minutes.

The migration did not go smoothly. In fact, there were glitches in customer service so significant that millions of dissatisfied customers

Reader ROI

- ▶ Why it's critical to test a new system in a real environment before going live
- ▶ What can happen to unfiltered back-end data when it's exposed to front-end applications
- ▶ How anticipating productivity gains can lead to trouble

walked away, causing the nation's fourth largest insurer to lose 6 percent of its health-care membership in 2002.

IT malfunctions may not have been the only reason Philadelphia-based Cigna lost a large number of employer accounts last year and watched its stock plunge 40 percent. Wall Street analysts say increased competition and pricing miscalculations on the part of Cigna management also contributed to the drop in health-care membership from 13.3 million at the end of 2001 to 12.5 million by January 2003. But in a conference call with investors to explain why Cigna posted a \$445 million net loss for the first nine months of 2002 and could only look forward to more bad news in the coming year, Cigna executives made it clear that the company had stumbled badly on what company officials like to call IT "transformation."

"Unfortunately, we have not executed well [on transformation]," confessed Patrick Welch, the new president of Cigna HealthCare, to investors on Oct. 28, 2002. "The cost is greater than anticipated, much of the economic and service benefits are yet to be realized, and transformation shortfalls have led to service shortfalls, which have led to lower new sales and [customer] retention."

Cigna's transformation was hobbled not only by the insurance giant's haste to get its new systems up and running, but by its eager-

want better tools and capabilities and product options, and they're driving us into this space," says John Ounjian, senior vice president and CIO of Blue Cross and Blue Shield of Minnesota, which recently launched an integration effort similar to Cigna's. "But there's a heavy risk involved. How you connect CRM to the back office and bring customers on board makes all the difference. When you stumble, the very credibility of your company is at stake."

STARTING OFF BEHIND

Cigna's facility in Bloomfield, Conn., where Anania spends half her workweek (she spends the other half in Philadelphia), could be mistaken for one of those sprawling, sterile junior highs that scarred the suburban landscape in the '50s and '60s. And, in fact, the cluster of glass buildings just outside Hartford is one of America's oldest office parks, built in 1958.

The dining room where Anania meets a visitor for lunch also seems a throwback to an era when top executives dined in country club elegance. Anania herself is petite and perfectly coiffed in a charcoal suit worn over a pastel tee. She has a gracious, unruffled demeanor, but when asked about her responsibility for the problems

with Cigna's IT transformation, a note of helplessness creeps into her voice. "What could one individual do?" she asks repeatedly. "There's only so much one person can do."

Anania became CIO and executive vice president of systems for Cigna Corp., the corporate umbrella for three primary divisions—health care, retirement planning and employee benefits—in late 1998, after being hired by the insurance company in 1995 as IS officer for its retirement division. She was promoted to CIO of that division shortly

afterward. In 1999, she embarked on an effort to restructure the way the company's IT staff of 3,000 was aligned in an effort to improve working relationships within the IT community.

At the same time, she began working with Cigna HealthCare on an ambitious plan to consolidate and upgrade its antiquated IT systems, some of them dating back to the original 1982 merger of Philadelphia's Old Insurance Company of North America and Connecticut General, which created Cigna Corp. The idea was to have an integrated system for enrollment, eligibility and claims processing so that customers would get one bill, medical claims could be processed faster and more efficiently, and customer service reps would have a single unified view of members to accomplish that. This meant the company would have to consolidate its myriad back-end systems for claims processing and billing and integrate them with glitzy new customer-facing apps on the front end. There would

"Unfortunately, we have not executed well on transformation. The cost is greater than anticipated, much of the economic and service benefits are yet to be realized, and transformation shortfalls have led to service shortfalls."

—PATRICK WELCH, PRESIDENT, CIGNA HEALTHCARE

ness to cash in on the technology's promise of reduced costs and increased productivity. Instead of waiting to see how the new systems performed, Cigna precipitously eliminated the very people who gave the company its human face: its customer service reps.

Anania and her team at Cigna now say they have fixed the glitches, and a subsequent migration of about 500,000 customers went far more smoothly. Even so, some observers consider the Cigna snafus a classic example of what can go wrong when a large enterprise is in a hurry to replace disparate legacy systems with new infrastructure and acts as if the promise of productivity gains is ironclad. And the lessons learned—about the need for methodical testing, experienced in-house project management and more standardized governance—are applicable to integration-minded CIOs in any industry.

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actually be two integrated systems, one for customers of Cigna's managed care offerings (HMOs) and the other for its indemnity products, including its lucrative business of administering self-insured plans for very large employers. (IDG, CIO's parent organization, is enrolled in Cigna HealthCare.)

The scope of the plan and Anania's presentation of it was impressive. Indeed, last year CIO singled her out as a winner of its 20/20 Vision Award.

Still, some observers ask why it took Cigna so long to get started on all this, given the age of its legacy systems. Several Wall Street analysts, for instance, question whether Cigna spent too much of its capital from various sales of noncore companies, such as property and casualty insurance, on stock buybacks rather than on infrastructure improvements. Between 1996 and 2001, Cigna spent \$7.6 billion on buybacks aimed at propping up its stock. "What they should have been doing is investing in IT and infrastructure improvement," says Shellie Stoddard, a director of Standard & Poor's in New York City. "They could have spent a half or a third of the money spent on repurchasing stock and put that back into their own systems."

Cigna's late start, combined with its rush to jump-start the new systems and save money on headcount, would prove disastrous. The benefits in customer service that Cigna expected to reap from transformation not only did not materialize but actually backfired, antagonizing members both new and old.

THE ROOTS OF FAILURE

To achieve transformation, Anania and her team had to build an entire AS400 infrastructure from scratch that could support the two main platforms for claims processing: PowerMHS software, which was already on a few AS400 computers, and ProClaim software, which was still running on IBM mainframes.

"We had to develop our own wrapper architecture to connect these two platforms and integrate claims eligibility on the front end with banking and billing on the back end," Anania recalls. "[To do that,] we had to completely reengineer the back-end systems."

Cigna did most of that architectural work in-house, Anania says, but the company did hire New York City-based Cap Gemini Ernst & Young (CGEY) to help implement the change management and business processes involved. Cigna HealthCare also worked with CGEY to develop and implement the new customer facing applications that would allow members to enroll, check the status of their claims and benefits, and choose from different health-plan offer-

ings—all online. Those apps would also give customer service reps a single unified view of members so that when a member called with problems or questions, the reps would have a full history of his interaction with the company. Cigna purchased Siebel software to handle the call center functions and selected a Computer Sciences package for claims processing.

Having started late, Cigna was under considerable pressure to get the new systems in place as quickly as possible. There were a number of reasons for the urgency.

First off, Cigna, along with other national insurers such as Aetna and Humana, was being sued by thousands of doctors nationwide

Members suddenly had trouble obtaining health coverage. Some lost coverage when their information would not load properly into the new systems. Cigna issued ID cards with incorrect identifiers. People couldn't get their prescriptions filled at their local drugstores.

who were furious about delays in payment for patient care. The doctors accused the insurers of deliberately delaying payment and improperly rejecting claims in order to save money. In January 2001, Cigna paid a \$300,000 fine to the state of Georgia and signed a consent order promising to reform its claims processing system after Georgia's insurance commissioner found its claims payment process to be "the worst I've ever seen." (Cigna recently settled most of the doctor lawsuits by pledging faster and more accurate claims processing with the new integrated platforms and promising to pay millions to physicians in compensation.)

Second, Cigna's sales team, in order to win large employer accounts in an increasingly competitive environment, had promised that the new systems would provide improved customer service and would be up and running in early 2002.

Third, Cigna's management was under pressure to cut costs after posting disappointing second quarter results in 2001, and they were anxious for the new systems' promised cost reductions and productivity gains. Management's stated goal was to lay off 3,100 people and hire another 1,100, for a total reduction of 2,000 positions.

Cigna began moving its members to the new platforms in 2001, but in relatively small numbers—10,000 to 15,000 people at a time. "There were minor things that were dealt with, but nothing major," Anania recalls. At the same time, the company began laying off



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customer service reps as part of a planned consolidation of 20 primary and specialty service centers into nine regional centers. Since Cigna expected huge gains in productivity from automated claims processing and customer service once the new systems were up and running, the reduction in headcount made perfect sense to management. In 2002, the company paid \$33 million in severance for the 3,100 laid-off employees and spent \$32 million to build the new regional centers.

A MIGRATION TO NOWHERE

In January 2002, with new members coming on board and existing ones renewing, Cigna moved 3.5 million customers to the new platforms in one fell swoop. Problems erupted immediately.

Members suddenly had trouble obtaining health coverage. In one case, Cigna's systems could not confirm health coverage for some new members for several weeks. Workers at another company effectively lost coverage when their membership information would not load properly into the new systems. Cigna issued member ID cards with incorrect identifiers. It issued cards missing prescription icons. People couldn't get their prescriptions filled at their local drugstores.

Morgan Stanley analysts heard about those snafus in late January and promptly downgraded Cigna's stock.

Not surprisingly, Cigna's customer service center was besieged by calls. But because of the layoffs (which Anania says was "a business management decision" she was not involved in), there weren't enough call center reps to handle the load. People waited on hold. And waited. And when they did reach someone, the reps who had been newly hired had not been adequately trained in how to handle the new technology.

"You can have the best system in the world, but if you have people with relatively little tenure, you're not going to get the best service," says Anania. "There were people with very little tenure handling these calls." (Cigna has since hired back a number of the reps it laid off.)

There were also problems with the actual migration of data from the legacy systems to the new platforms. "There were some issues with that," Anania acknowledges over bow-tie pasta and chicken in Bloomfield. "The back-end data didn't work at the front end."

As other CIOs have found, converting

customer data from the back end to new customer-facing apps can be tricky. The data has to be cleaned and filtered in order to be understandable to customer service reps taking calls and to members seeking information online. "When you take data from the back-office function that was built to process claims and expose that data to the front end, it starts looking funny," explains Ounjian, the Minnesota Blue Cross and Blue Shield CIO. "Take ZIP codes, for example. Many years ago, saving space on disks was critical, so back-end programmers compressed the ZIP codes from nine digits to eight, and if you just took that data and exposed it to the front end, you're going to make your company look awkward."

Ounjian, whose company has captured a few of the national accounts lost by Cigna this year, says the key to a good CRM system is not how many features it has, but how it's executed. And the key to a good execution is testing and retesting the system in a real environment.

Anania acknowledges that the Cigna team "didn't have time to do a very thorough volume testing or end-to-end testing" in the rush to go live. But she blames that on the IT staff working for Cigna HealthCare's business unit and on the CGEY consultants brought in to do the implementation. Asked if she herself bears any responsi-

Lessons Learned

Six steps to managing new systems migrations better than Cigna did

- 1 KEEP THE PROJECT MANAGEMENT IN-HOUSE**, even if you hire a consultant to implement your integration project. Have experienced project managers on staff to monitor every stage of the process.
- 2 TEST IN A REAL ENVIRONMENT AND END-TO-END BEFORE GOING LIVE**. Take your time moving data from the legacy systems to the new platforms, and do it in bite-size chunks so that you can fix glitches as you go.
- 3 MAKE SURE YOUR BACK-END DATA IS CLEANSED AND FILTERED** for front-end use. When it comes to data migration, take nothing for granted.
- 4 BRING IN A FOCUS GROUP OF CUSTOMERS** after you've tested the system with your sales, marketing and customer service reps. Then go back and redesign the front end so that customers can actually use it.
- 5 TRAIN AND RETRAIN THE CUSTOMER SERVICE REPS** on the new systems.
- 6 DON'T EXPECT PRODUCTIVITY GAINS FOR MONTHS** after the new platforms go live, and don't make business decisions based on anticipated projected savings or gains. Wait to see if they materialize. —A.B.

bility for ensuring that comprehensive testing was done, she says, "The business divisions had autonomy, and you can't second-guess the people on the ground every day. The business was working with a name-brand systems integrator, and they were not knocking on the door saying, Don't go live, don't go live. Can you truly expect one individual to have more visibility into the day-to-day workings of what's going on in that project than the people in charge of it?"

"We moved 20 experienced application developers into the project," says Anania. Translation: Cigna is relying less on its name-brand integrator and more on its own IT staff.

(Brian Baum, chief marketing officer of CGEY's health business unit, declined to comment, citing "contractual arrangements" that prohibit the consultancy from discussing the project publicly.)

Anania says the back-end data problems have since been fixed. "We slowed down the pace of migration and shored up those processes around the conversion of customer data," she says. Her IT team also instituted more thorough testing practices and brought in more experienced managers to monitor the project. The CIO of Cigna Health-Care, Meg McCarthy, who was hired by Anania, has been let go, as has the IT manager directly in charge of transformation, Hayward Donagan. Both women declined to comment for this article, saying they had signed nondisclosure agreements upon leaving Cigna.

POST-MORTEM: A HARD LESSON LEARNED

In July 2002, Cigna was able to move additional members to the new platforms without major incident, and in January 2003 it successfully migrated another 700,000 members. The company also launched MyCigna.com, an online portal where Cigna members can look up their benefits, choose from an array of health plans, check on the status of their claims, retrieve health information and talk to nurses online. While some members have complained of difficulty in getting onto the personalized portal, Anania and others point to MyCigna as an example of a successfully implemented technology-based project.

Cigna officials now say that despite the initial problems, the transformation project is allowing the company to process medical claims more efficiently and better manage customers' needs. In January, the insurer announced it was cutting another 3,900 positions as part of a "streamlining" of Cigna's sales force and medical management team. A spokeswoman said the new IT systems have enabled that downsiz-

ing by eliminating duplication in claims processing and billing.

Recent customer satisfaction surveys conducted by Cigna show that 83 percent of existing members are satisfied with the service they get, compared with 58 percent earlier in the year. The project, however, will well exceed its original \$1 billion price tag, according to Anania. Cigna officials decline to put a number on the extra cost.

Anania says there have been a number of lessons from the missteps of the past year (see "Lessons Learned," opposite page), among them the need for strong IT governance.

"We moved 20 experienced application developers into the project," she says. Translation: Cigna is relying less on its name-brand systems integrator—CGEY—and more on its own IT systems staff to manage the project. (For more on bringing project management in-house, see "It's Time to Take Control," at www.cio.com/printlinks.)

Anania, however, seems reluctant to centralize the governance of IT to too great an extent. "At the end of the day, you have to strike the right balance between central IT authority and strong functional guidance that's aligned with the business," she says.

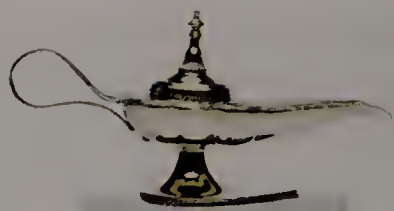
Wall Street analysts who cover Cigna are troubled by its missteps, but most remain bullish on its prospects for recovery. "This kind of thing is cyclical," says Todd Richter, managing director with Banc of America Securities in New York City. "Over the past five or six years, Cigna stock has outperformed Aetna's. Aetna is now on a comeback, and they are forecasting huge earnings growth, and Cigna is forecasting down earnings for next year."

Standard & Poor's Stoddard agrees: "Cigna mismanaged their pricing, mismanaged the risks they were holding in their reinsurance operation, and mismanaged their IT transformation. But these problems can be fixed. Aetna lost millions of members with bad pricing, and they turned it around."

Cigna is working hard to do the same, and Anania remains part of that turnaround team. But even now, the CIO seems reluctant to claim ownership of Cigna's IT future. When asked if the buck stops here for IT's performance, she sits back in silence and looks vaguely troubled. It's left to her PR handler to jump in and say, "Yes, the buck will stop here going forward." **CIO**

You can share your own IT transformation experiences with Executive Editor Alison Bass at abass@cio.com.

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Education

HEADQUARTERS

Athens, Ga.

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faculty who own laptops and
handheld devices.

URL

www.nmi.uga.edu

OBJECTIVE

To experiment with mobile
applications that will appeal to local
college students using a wireless
area network.

THE PLAYERS

SCOTT SHAMP

Director, University of Georgia's
New Media Institute

THE CITY OF ATHENS, GA.

LOCAL BUSINESSES

CASE ANALYST

MARK LOWENSTEIN

Managing director of Mobile
Ecosystem in Wellesley, Mass.

Big Network Off Campus

Technologists and local merchants have turned downtown Athens, Ga., into a lab for mobile applications aimed at local college students BY MICHAEL KANEL

AN AMBITIOUS CLOUD has settled over Athens, Ga. The invisible presence is actually a hopeful experiment, a wireless local area network that was formally flicked into being in December around 24 blocks of downtown in this small city. It is now heavy with connections, communications and—mostly—possibilities.

Known as the Wireless Athens Group Zone—WAGZone for short—the cloud was the brainchild of technologists at the University of Georgia's New Media Institute. From its conception, the project took about 18 months to build. "Pretty much all New Media programs start off with five words: Wouldn't it be cool if," says Scott Shamp, the institute's director and an associate professor at the university's communications school. "We wanted students to think about using mobile technology to forge a new relationship with information."

With nine Wi-Fi transmission boxes spread around downtown, the WAGZone welcomes

laptops and PDAs fitted with wireless networking cards. Users get access to WAGZone content, and if they are University of Georgia (UGA) students or faculty, they also have access to the Internet. If the WAGZone takes flight, it will get its lift from the school's roughly 31,000 students. And at the outset, the applications most likely to draw immediate use are aimed right at students—at least the ones who walk downtown with a wireless PDA. (Shamp estimates that 35 percent of students own a laptop, but has no firm estimates on how many are wireless or how many students have PDAs.)

The first application that New Media students talk about is called Nimbus. It lets a user set up a list of likewise-equipped friends, then anytime a user is downtown, she can find out which of her "buddies" are also in the area—and where they are hanging out. Each user has to enter her location, so it is not automatic. (A global positioning option may be offered,

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should the WAGZone take off.) But it plays to student attitudes.

"If everybody's going to a concert, say, then the database will show that, and you'll know that's the hottest show," says Ryan Manchee, a telecommunications major at UGA. "Or you see that some people are hanging out at Wuxtry's" (which sells used records and CDs), "or that your friend Heidi is studying at Espresso Royale. The typical college students, they come downtown, and if they've got 20 friends, why call them all to know where they are?"

Of course, it's hard to envision student shmoozing as the core of a profitable business plan. So the WAGZone is envisioned also as a tool for connecting merchants and visitors—tourists, townies and students too. Over at Wuxtry Records on East Clayton Street, co-owner Dan Wall likes the idea that the network tells people where their friends are, where the cool places are, and what new releases are in the stores or—in his case—what dusty but desirable rarities of days gone by exist.

Over Wall's shoulder as he speaks is a poster for the movie *Yellow Submarine*. Over the stacks behind him are a series of album covers from the Isley Brothers' *Shout!* to REM, the Beatles and blues. Wall's inventory may be largely vinyl era, but he has been selling via a store website, and he is not put off by the technology. It's just that the WAGZone's commercial proposition is a trifle hard to fathom. Still, the feel is right. "To tell you the truth, it's a little vague to me. But it seems exciting. Like there is something in the air," he says.

The concept—paralleled in various other cities, from Portland, Ore., to New York City—is perhaps an inevitable reversal of the first wireless wave. Up to now, the revolution in wireless technology has been, in many ways, a campaign to eradicate distance, to make location irrelevant. You dial a phone or punch up the Internet from wherever you are. You have a conversation, surf the Web or send e-mail from a park bench just the same as from your office. Location doesn't matter.

GREAT WIRELESS TEST BED

BY MARK LOWENSTEIN

WITHIN THE PROLIFERATION of wireless LANs, universities represent an interesting juxtaposition. College campuses are among the most wired places on the planet, and students are never far from a terminal. That might be why there is little interest in traditional wireless WAN services. Last semester I taught a course at Tufts University. All but one of my 25 students owned a mobile phone, and one-quarter of them used that as their only phone. Yet outside of Short Message Service missives, few were interested in accessing Internet content from their wireless phone or even their laptop at dial-up speeds. With more than 30 percent of University of Georgia students owning a laptop, WLAN as a broadband extension of the wired campus environment is a natural.

The WAGZone is groundbreaking in two ways. First, it is a unique example of cooperation among academic, government and business constituencies. Second, much thought has been given to the type of content users would be interested in accessing while mobile—a departure from "build it and they will come" network deployments. The Nimbus application is interesting, as it extends the instant messaging culture so prevalent in the youth market to a mobile environment. The opt-in aspect alleviates some of the privacy concerns associated with the coming wave of location-based services. If Nimbus is successful, I would like to see the application integrated with wireless phones in some way, since PDA penetration remains low.

The case for the database services is less convincing. Why is a subset of information from a local newspaper placed on the WAGZone when laptop/PDA users with a Wi-Fi connection can see the entire publication via the Internet? A mobile version of *Flagpole* would make more sense if it pushed personalized content to users.

The WAGZone is a relatively low-cost way to deploy a limited Wi-Fi network to learn about usage patterns and content interests in a university community. But larger issues remain, such as students' willingness to pay, how merchants make money and how the WAGZone integrates with the islands of public WLAN service proliferating across the country. And since this is a quasi-public network, there are security and network management concerns related to both internal and potential external users. Organizers should also consider the relationship between the WAGZone and wireless WANs.

This deployment represents both the benefits of WLAN technology, and the key business model and integration issues being debated within the wireless community.



Mark Lowenstein, a veteran wireless industry analyst and consultant, is managing director of Mobile Ecosystem in Wellesley, Mass.

In contrast, the Athens experiment is an attempt to make location matter—to marry wireless and place. That could mean that someone sipping a latte could check on the wait time at a restaurant four blocks away. Find out which band is playing at which club right now—and what song it's playing.

Order a pizza that will be ready when she strolls across town. Check to see if the new Shania Twain album has arrived in a store. None of those require stunning new technology. What they require, however, is a tech-bridge between your presence in town and what you can do while you are there.

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"The potential is for information to accompany you as a companion," Shamp says. "This is the test bed for that." While the technology is not a challenge, the WAGZone cloud has a database that is still, well, kind of cloudy. But there are some starter applications that may lead the way to some-

oriented Nimbus to the virtual storefronts. For instance, the places where the students hang out could automatically offer promotional offers and come-ons to the rest of their buddies who log on.

That sounds good to merchant Creighton Cutts. Cutts, owner of Frontier, a downtown

Any other user can have free rein on the WAGZone but will get blocked at the entrance ramp to the Net.

Even for UGA users, the WAGZone's Net access is not the main selling point. Partly to prevent a conflict with ISPs—and keep the Net from becoming its focus—the WAGZone was not designed to reach indoors, only to reach public spaces. Shamp emphasizes the Zone as part of the walking around experience, the tie between visitor and place.

Making that happen depends on developing WAGZone content, and building that bridge between location and technology. And, of course, content depends on users who depend on content.

To tap into the WAGZone network requires at least an investment in a handheld and a wireless card—something that could set you back more than \$500. Will they get cheaper? No doubt. Will they eventually become as common as cell phones? That's tough to predict. Athens does have the advantage of being a well-visited city (host to Georgia Bulldogs football games, for example) and home to many well-educated professionals not intimidated by technology.

Even so, it should be a long time before the WAGZone system is stressed, Shamp says. For now, the WAGZone database runs on a New Media Institute server. The cloud itself uses the 802.11b or Wi-Fi wireless protocol. Wi-Fi operates in unregulated spectrum, which in theory means anyone can set up competing systems on the same frequency. The hope is that no one will do that unless they want to be part of the WAGZone and are willing to negotiate an interface. But it is a risk.

It is a risk for users too. New Media bought a turnkey firewall from Bluesocket for about \$5,000, but there's a conscious trade-off here between cost and security. The idea is not to have a lot of confidential data that needs protecting on the WAGZone, Shamp says. "It doesn't matter how secure you are, somebody can break into it, if they are dedicated to it. I tell people, I wouldn't do anything on the WAGZone I wouldn't do in the park with my mom watching."

One application on the wireless network lists music concerts. Another lets users locate their friends. And while it's hard to envision students shmoozing as the core of a profitable business plan, local merchants are willing to give the experiment a try.

thing denser. For instance, a host of Athens entertainment information from *Flagpole*, the local alternative weekly, is on the WAGZone, accessible to all users.

That can be one more way to get people where they want to go, says Jane Scott, owner of the Native America Gallery in downtown. "You don't want to bombard people, but we get lots of visitors to Athens. People are always asking us where the restaurants are, the cool places to go," she says.

And there are other, quirkier possibilities that play to the singularity that is Athens. There is a music tour of Athens, a hip, wireless version of those museum walking tours. A video clip shows resident Jared Bailey talking about his friendship with REM back when it was just a local band. As the tour progresses, the laptop or PDA screen features Athens musician Vic Varney standing in front of the Georgia Theatre and reminiscing about how his band opened up there for the B-52s on Groundhog Day in 1979. And on its official kickoff day in December, the WAGZone unveiled a real-time, lyrics follow-along as the Fairburn Royals, a current-day local band, played.

Meanwhile, some businesses have virtual storefronts that give a WAGZone user a quick look-see, but just that so far. Not a way to make reservations for dinner, not a way to buy CDs, but still a first step. It wouldn't be hard to connect the student-

store that sells "eclectic and unusual gifts for soul and shelter," says he isn't sure how soon that will matter to his business, but he's open to the idea. "We are thinking about putting in a virtual coupon, so if you walked within a hundred yards of Frontier a coupon would pop up, with a time limit to use it," he says.

NET ACCESS IN PUBLIC SPACES

What the WAGZone emphatically is not, is a no-charge wireless Internet connection. Yes, if you are part of the UGA community, the WAGZone gives you a way to the Net when you are downtown and mobile. But the image of surfing the Net from deep in the café with cappuccino in hand doesn't necessarily hold—the WAGZone is designed to work outdoors. But Shamp is adamant: The WAGZone will not be competition to Internet service providers. "If we undercut the ISPs, then the Internet would dry up and go away," he says.

There are already commercial arrangements for providing a wireless way to the Net. Starbucks customers, for example, can have Net access via T-Mobile. Other businesses have arrangements with other carriers. And University of Georgia students and faculty already have Net access, so the WAGZone only extends to wireless what they already have. They just have to log on in the same way they do from their rooms.



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Hardware for the WAGZone system costs less than \$35,000. Someone duplicating the system elsewhere could spend more, since virtually all the WAGZone work—the brainstorming, the software and code-writing, the lobbying of a few businesses downtown—was done by students. Even better, the maintenance of the system can be done by a New Media employee; its demands are so low-key that they can be tucked inside the worker's 10-hour-a-week assignment, Shamp says.

WAGZone's goals are to lure wireless companies—carriers and content providers—to a wide-open startup. To make downtown an ever-more vibrant—and cool—place. And of course, for Athens businesses to make more money and for the city to prosper. Yet the commercial aspects of the Zone are almost as nebulous as the WAGZone itself. "I won't lie to you," Shamp says. "They haven't figured out how to make money on this. But the [business owners] are willing to do it

because they don't have to pay for it."

The New Media Institute has a deal with Athens-Clarke County to have its network boxes on poles around downtown through August 2003. City government is excited about the prospect, although new Mayor Heidi Davison says she was a little bowled over at her first briefing on the technology. "I felt like an interplanetary alien dropped into a new world. I don't understand it. But I'm fascinated by it," she says. Even if the project doesn't make money for anyone right away, it could add to "the buzz" in downtown, she adds.

Picking up the tab for the project was the Georgia Research Alliance, an economic development consortium of business, academia and government that invests to nurture Georgia's technology community and—whenever possible—attract more business to the state. Not even the 15 businesses that are involved in the WAGZone have a

clear sense of where this is going, only the notion that wireless will eventually take them somewhere—and it's better to be on board as the train is pulling out than to try leaping onto a juggernaut.

Still, Cutts at Frontier doesn't think it is going to change Athens business real soon. "Right now, I think it's neonatal," he says. But just the buzz is a good idea, he says. "If more people come into downtown, then more people will come into Frontier." **CIO**

Michael Kanell is an economics writer for the *Atlanta Journal-Constitution* newspaper. Send ideas for future wireless Case Files to Executive Editor Michael Goldberg at mgoldberg@cio.com.

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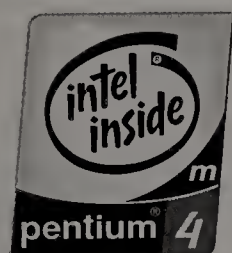
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E-commerce is now a basic part of Sears's retail strategy, says Garry Kelly, senior vice president and CIO.

E-commerce is down but hardly out. It's now up to CIOs to lead online tactics and strategy. And when the economy finally rebounds, so will business units' interest in e-commerce.

BY ELANA VARON

THE NEW LORDS OF

E-BIZ

CORPORATE E-BUSINESS TEAMS WITH THEIR OWN I.T. BUDGETS HAVE ALL BUT evaporated, but the CIO's responsibility for developing online sales and supplier channels is still evolving. What you do now to define yourself as an e-business tactician, strategist and gatekeeper will determine your role as a decision-maker for future e-commerce investments.

Despite the antihype, e-commerce isn't dead. "There's a real excitement vacuum, but there's not a

spending or an interest vacuum," says Whit Andrews, a research director with Gartner in Stamford, Conn. And responsibility for e-commerce spending and strategy falls increasingly to CIOs. According to a survey by Cambridge, Mass.-based Forrester Research published in August, three times more companies are now making technology decisions centrally than they were in 2001.

Now that e-commerce is no longer an experiment, business executives understand that an integrated enterprise is critical

Reader ROI

- ▶ What e-commerce responsibilities CIOs are claiming
- ▶ How CIOs' e-commerce role will continue to evolve
- ▶ What you can do now to retain influence in e-commerce decision making

E-Commerce

to online success, says Edieal Pinker, assistant professor with the W.E. Simon Graduate School of Business Administration at the University of Rochester. "As the role of e-commerce in these firms has matured, you no longer need this special figure [of an e-commerce unit leader] trying to educate the organization about e-commerce and trying to promote it," says Pinker, who has studied e-commerce operations at 35 large companies. "You want reliability. Now you really need the chief information officer."

And CIOs are actually spending money—even if not a lot of it—on e-commerce. A survey of over 500 CIOs and IT directors published by AMR Research last September found that most planned to spend at least a small amount on e-commerce systems in 2003. The survey respondents said they would focus on infrastructure investments, such as enterprise application integration, that ultimately support online commerce.

For instance, Sears, Roebuck and Co. spent an undisclosed amount in 2001 to revamp its inventory management systems to support in-store pickup of online purchases. "The overall [e-commerce] business model is focused on growing sales, providing enhanced security and stability, and efficient fulfillment," says Garry Kelly, senior vice president and CIO at the Hoffman Estates, Ill.-based retailer since October. "That means the back end of e-commerce—pick, pack and ship—has to be every bit as good as the click, select and check out."

In answering the call for efficient and reliable e-commerce architectures, CIOs have become the overseers of online operations. But there's a danger that when the economy picks up, business units will chafe at the constraints CIOs imposed on e-commerce spending during the economic downturn. Smart CIOs can take steps now to create a framework for making decisions on online strategy and the investments that are necessary to execute it.

Your First Task: Online Tactician

There's a strong operational component to the CIO's e-commerce role today: Keep



The downturn forced business executives to cede control of e-commerce to IT, says Soletron CIO Bud Mathaisel. Now the onus is on CIOs to deliver robust, low-cost functionality.

e-commerce applications running, deploy new applications that the business needs, and keep costs under control. Today, most companies have their online strategies in place, according to Rochester's Pinker. Now the focus is on execution.

Bud Mathaisel, corporate vice president and CIO with Soletron, a Milpitas, Calif.-based electronics manufacturing services provider, sees a pattern in the adoption of e-commerce that reflects previous waves of new technology deployment. "In the first wave, innovators take charge of everything," he says. Then the novelty wears off, and what was new becomes routine. "The same

was true with minicomputers and PCs. When it stopped becoming fun for the people who ran it, they handed it back to IT," he says.

Soletron never had a separate e-business unit. Instead, Mathaisel's IT group worked with teams from each functional group to find ways to use the Internet. Those teams ran their own e-commerce applications, to some extent. The functional teams haven't disappeared, but Mathaisel's IT group has taken on more of the technical responsibility for online buying and related applications. For instance, IT has taken over management of "collaboration environments," which are

online meeting rooms employees use to work with each other as well as with customers and suppliers. The online rooms began as pilots but proliferated to the point that the company didn't have enough bandwidth to support them. Managing network capacity wasn't a job that users had the expertise to do—nor did they want to. Now Mathaisel incorporates the meeting rooms' usage into his calculations of organizational bandwidth needs.

Centralized IT decision making about e-commerce has been a byproduct of the economic downturn. One of the first steps many CIOs took to control costs as the economy weakened was to impose standards on website deployments. Mathaisel consolidated hardware. He's replaced servers that do "unique things, like the corporate portal or supplier interchange" with larger, multipurpose boxes. Joe McMakin, vice president of global IT at Air Products, an Allentown, Pa.-based chemical company, decided to replace custom-built extranets with a standard set of

Your Next Role: E-Commerce Strategist

Efficient operation of e-commerce applications is now a part of many CIOs' portfolios, but their responsibility goes far beyond providing support. CIOs who wait for marching orders from the business units—as many did in the early days of e-commerce—are liable to miss the opportunity to apply technology strategically. "During the bubble, the CIO really got jammed in the back office," observes George Colony, chairman and CEO of Forrester Research. "The real action driving e-commerce was on the marketing side and the business side. Postrecession, the chief information officer is [going to be] an equal partner [in e-commerce functions], with a much broader role."

Sears's Kelly views e-commerce as a component of his company's overall IT strategy. "E-commerce is an extension of a business-selling model, whether it's business-to-business or business-to-consumer," he says. "We have to develop and implement an IT

ness strategy development. A few years ago, when Air Products made its first investments in e-procurement technology, McMakin advised using an application service provider rather than run a system in-house. "The [procurement] technology is very volatile," he says. He didn't want to waste money developing systems that the company might later abandon. More recently, like many of his peers, he has advised against investments in new e-commerce ventures, instead supporting Elemica, an online marketplace for the chemicals industry. McMakin has also assigned staff to work on industrywide data exchange standards using XML—a necessity if companies with incompatible systems are to easily communicate online.

At Solectron, Mathaisel reports he has "more of the total accountability" for moving additional business processes to the Web. In conjunction with each business unit, he's in the midst of reviewing which processes are the best candidates for moving online, whether they're manual or automated using

E-commerce is an extension of a business-selling model, whether it's business-to-business or business-to-consumer. We have to develop and implement an IT strategy that supports Sears at an enterprise level and a business unit level.

—Garry Kelly, senior VP and CIO, Sears

online services for interacting with trading partners. And he will largely control when and how those services are integrated with the company's SAP and legacy systems.

Business unit executives in many industries have relinquished control of e-commerce applications, in an acknowledgement that the IT organization can deliver applications more efficiently. The arrangement "is a quid pro quo," says Mathaisel. The business units are "keeping functional business process responsibility, but they're expecting the CIO to produce a more robust, lower-cost environment. As long as that equation is satisfied, everybody's happy," he says.

strategy that supports Sears at an enterprise level and a business-unit level," where Sears.com is one of several business units. Kelly heads an IT investment committee that includes representatives from Sears's customer-facing businesses. That committee decides which systems to build, based largely on whether the expenditure will help create additional operating income.

McMakin, who spent 22 of his 28 years with Air Products in non-IT positions, rising to vice president of the specialty chemicals division, says his views about the value of particular technology expenditures carry more weight because he participates in busi-

ness strategy development. Like other contract manufacturers, Solectron competes by making it easier or more cost-effective for customers to use its services. Recently, Mathaisel deployed an application, suggested by one of Solectron's business units, that lets customers track the progress of their orders on the factory floor. Now customers can monitor circuit boards as they are assembled, look up test results and get other information without having an inspector onsite.

Another of Mathaisel's e-commerce tasks is to decide how to apply Web services, which will enable integration with Solectron's customers. Taking into account new

investments the company is making in Web services, Solectron's total investments in e-business are increasing. While it's easy to define e-commerce narrowly as online buying and selling, investments in systems that support purchases and sales are included under the e-commerce umbrella for many CIOs.

When Sears acquired catalog retailer Lands' End 10 months ago, top executives decided that Lands' End should retain its own IT organization while Sears studied opportunities to integrate the two organizations' systems. Kelly says that although a unified IT strategy for all of Sears's direct-sales organizations is his ultimate goal, it isn't on the agenda right now. How and when the integration happens will be a corporate decision, says Kelly, in which he'll have a significant role.

Your E-Commerce Future

When the economy improves, governance structures imposed by CIOs today will become the main vehicles through which they retain their influence on e-commerce strategy and expenditures. "The CIO is going to become the gating factor, so we don't go back to willy-nilly spending," says Gene Alvarez, vice president for e-business strategies with the Meta Group in Stamford, Conn.

The challenge for CIOs, however, will be to maintain discipline when money is no longer

a company," says Forrester's Colony. Whoever emerges as the next e-commerce champion will be an executive steeped in his company's customer needs. At most companies, Colony predicts, that won't be the CIO, since the CIO simply isn't close enough to the customers.

CIOs who want to retain influence in e-commerce must build close partnerships with the business side. While they're in the e-commerce driver's seat, CIOs need to hold e-commerce strategy sessions and initiate

vide new capabilities that fulfill their business strategy. He also hears CIOs asking tough questions about whether a new need can be fulfilled using existing resources.

At Staples, the Framingham, Mass.-based office supply retailer, Executive Vice President and CIO Paul Gaffney has used a steering committee of IT and business representatives to establish support for integrating separate e-commerce initiatives into a common infrastructure. While different business leaders run Staples.com and the division in charge of Sta-

THREE STAGES OF THE CIO E-COMMERCE ROLE

■ TAKING A BACKSEAT (1996-2000)

Companies form e-commerce teams to champion the Web. Business units launch websites and decide which e-commerce technologies to buy. IT takes part in decision making, but most CIOs are not in charge of spending.

■ PICKING UP THE PIECES (2000-2002)

In the wake of the dotcom ruin, many dedicated e-commerce teams disappear. The economic downturn prompts cost-cutting. CIOs scrutinize e-commerce spending and consolidate online applications.

■ BECOMING AN E-COMMERCE PARTNER (2002-TODAY)

Online commerce is an accepted part of corporate strategy. CIOs are key advisers to businesses about how best to exploit technology to achieve e-commerce goals, but they aren't necessarily the overseers of e-commerce.

—E.V.

Any CIO has to have enough understanding of the value equations within the business to have impact through e-business initiatives. At the end of the day, it's the profitability of the company that matters.

—Joe McMakin, VP of global IT, Air Products

tight. There's more than one organizational model for managing the next phase of e-commerce, and not all of them put the CIO on top. Future leadership in e-commerce "depends on who is the best available 'athlete,' and power arrangements and politics in

conversations with business leaders about how IT supports the big picture. Alvarez notes that as CIOs fine-tune existing e-commerce systems, they have an opportunity to educate their colleagues about how, for example, upgrading a system might pro-

ples' contracts with corporate customers, they have begun to share applications such as order processing. "We're very focused on the systems side with finding commonality," says Gaffney, because it helps improve the company's operating margins.

Gaffney recently revamped the pricing model used by the contracts division to make it easier to maintain and less demanding of server power. The old model was really multiple applications that have now been consolidated into a single one. "We had as many pricing models as customers," says Jay Baitler, who runs Staples' contract division. Now, Gaffney figures, the rest of Staples can use the application too. "It's better having one pricing subsystem for the whole company," he says. The e-commerce steering committee is an avenue for communicating how applications that were developed for one part of the company can benefit others.

Baitler says business leaders, himself included, are more willing to share applications and go along with corporate technology standards because they understand better that an integrated IT strategy for e-commerce benefits the entire company. "There's less yelling 'me, me, me' and more, 'What's right for Staples,'" says Baitler. "My success is based on [CIO Gaffney's] success. That's a very, very important cultural change in this organization."

Similarly, Air Products' McMakin says that online success depends on business unit leaders acting together for the greater good of the company, with the understanding that e-commerce isn't just a flashy trend. "These are fundamental capabilities we will be building to use for the rest of the time the enterprise exists," he says. Like Gaffney, McMakin must show his colleagues how applications deployed for one business unit affect the company as a whole, and he must show them how to assess the trade-offs among different e-commerce investments. That kind of education is critical to McMakin's efforts to obtain continued buy-in from other senior



Online success depends on the CIO and business unit leaders acting together for the greater good of the company, says Joe McMakin, VP of global IT for Air Products.

executives to his view that the company should build scalable, generic applications, rather than one-off applications tailored to specific supplier or customer groups.

Air Products still has an e-business team that decides which online initiatives should be corporate priorities, while an e-business steering committee decides which systems to fund. The e-business director reports to both McMakin and Bill Cantwell, the company's vice president for process management. Meanwhile, McMakin, Cantwell and several other executives sit on the e-business steering committee. Through each group, McMakin has a hand—but not the final

say—in which online projects are budgeted.

McMakin says it's important that he have input on e-commerce and appropriate that he share decision-making power. "Any CIO has to have enough understanding of the value equations within the business to sort through where to spend money and how to have impact through e-business initiatives," he says. "At the end of the day, it's the profitability of the company that matters." **CIO**

Does e-commerce responsibility fall naturally to the CIO? E-mail us your thoughts at letters@cio.com. Senior Editor Elana Varon (evaron@cio.com) follows e-business trends.

CIO.COM SO, NOW WHAT'S THE E-BIZ STAFFING STRATEGY?

At General Motors, a cross-functional matrix structure creates an intentional and healthy tension. Read about how GM handles its e-initiatives in **GM SHIFTS GEARS**. Find it online as a link from this article or go to www.cio.com/printlinks.

Sound Off

Taking Sides on Critical IT Issues

Ready for Instant Messaging?

BY ART JAHNKE

ANYONE WITH SCHOOL-AGE CHILDREN has no doubt about the preferred means of communication for Americans under the age of 18. Instant messaging (IM) applications are the perfect medium for teen chitchat, gossip and banter. But what most parents don't know is that they may soon have their own buddy lists, courtesy of their employers.

IDC (a sister company to CIO's publisher) predicts that worldwide business-based instant messaging will balloon from 20 million users last year to 300 million by 2005. And technology analysts from Gartner think that by next year, 70 percent of enterprise employees will be using IM.

Corporate America is getting the message: IM isn't just child's play; the technology's lightning-fast back-and-forth among groups of people can help managers stay on top of projects and can facilitate valuable bonding of corporate teams. According to a recent *Wall Street Journal* article, IM helped Lehman Brothers associates communicate with each other after the 9/11 attacks, when telephone networks had been knocked out.

Many employees already use an Internet-based version of IM, such as AOL Instant Messenger, Microsoft's MSN Mes-



senger or Yahoo Messenger, without their CIOs' permission. The reasons and internal pressures are mounting for the CIO to implement a formal IM strategy and employ one of the growing number of corporate IM vendors.

There are downsides, of course. How safe is it really to zing important company info back and forth across networks? Is this just a new avenue into your enterprise for hackers and viruses? In this time of emphasis on productivity, the last thing that any business needs is a swell new way to waste time. And if anyone wonders if IM is a swell time-waster, just ask the parent of any student to name the main reason why, recently, homework has been taking so long to complete. (For more on the topic of instant messaging, read "Sending a Message" at www.cio.com/printlinks.)

We asked our readers if their enterprise is ready for IM. Here are some of the responses.

ILLUSTRATION BY EDWARD SCHNURR

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Sound Off

I.M. HAS WIGGLED ITS WAY TO BECOMING A CRITICAL COMMUNICATION tool for a small percentage of employees at my organization. Although it might seem more beneficial to use among the numerous sites of my company, which are scattered across the country, it has more commonly been implemented to stay in touch with the customer five miles down the road. The introduction of IM wasn't a formal IT initiative but a casual customer request that was fulfilled (quietly) by our frontline employees.

Once it was discovered, it didn't take me long to see the value. Prohibiting the use of instant messaging (either suggestively or by force) would break communication lines with our customers. And if we aren't willing to communicate with our customers using this tool, they just may find another contractor that will.

Bob Tracy

CIO

Information Spectrum

I DEFINITELY WILL NOT BE IMPLEMENTING I.M. ANYTIME SOON, IF ever, in my organization. IM is a huge drain on employee productivity, which has been found with e-mail as well. IM also makes it far too easy for sensitive information to be released to the wrong people without prior thought to the consequences of that release. People have "loose lips" with e-mail, and even looser ones with instant messaging—a privacy and security risk I cannot afford in the health-care industry, thanks to the Health Insurance Portability and Accountability Act.

Kenneth Kubiak

Information Security Officer

Buffalo Hearing and Speech Center

kkubiak@bflohearspeech.org

THE UTILIZATION OF INSTANT MESSAGING PROGRAMS IS A MATTER OF professional discipline. Like all forms of communication it can be a time waster or a highly effective tool in getting work done. One could argue that any form of communication can be abused, and the nonprofessional-minded person often does it. The issue now is that staff can appear to be working, since they are at their station, but in reality are passing time switching between windows. As a leader and a manager, I believe it is my responsibility to effectively delegate tasks to my staff, have an understanding of the scope of those tasks and measure my staff on their ability to deliver. I assign tasks and due dates, and expect my staff to deliver based upon schedule commitments.

As far as security, like all forms of traditional and electronic

communication, it is really a permissive model (discounting true software security issues and defects). E-mails, phone calls, copy machines and hard copy all present a very easy opportunity for someone who wishes to violate a corporate (or national) security model. The effectiveness of security does not lay in the technology but in the people who adhere to or violate policy.

Michael Clancey

IT Manager

MY TEAM OPERATES OUT OF TWO LOCATIONS AND USES AOL INSTANT Messenger to request things of one another. In fact, I use Messenger to gain access to key members of my team myself. I find the ability to stage a question that they can answer when they have a moment is far less disruptive than calling them directly. Since Messenger requires less energy than e-mail, I find it saves me time.

On the bad side, we don't currently block the use of Messenger for external communication, so people can be distracted by nonwork-related discussions, similar to hanging on the phone.

We will likely strive to block external use of Messenger, at least for core hours, some time in the future.

Rod Hamilton

CIO

Hygeia

WE HAVE ALLOWED AOL INSTANT MESSENGER FOR SELECTED CUS- tomer support functions with a critical customer. However, we are installing Sametime (we're a Notes shop) to secure the connection and will block AOL at our firewall.

Wayne Chew

IS Director

Siegel-Robert

ALTHOUGH I.M. IS HERE TO STAY, I CAN'T TELL YOU HOW MANY companies I run into that have no clue what's happening in the network because of IM. Employees aren't trained in security practices, and until they are trained, using IM is like playing with fire. The problem is that getting rid of IM is not an option anymore, as people are using it for business reasons, and IT's hands are tied. I have been recommending installing a gateway to manage AOL, MSN and Yahoo. There are a couple out there, for example Akonix, IMAge, IMlogic and FaceTime. Akonix seems to be focused on security more than the others.

Randall Black

Chief Scientist

The Black List, Security

theblacklist1@hotmail.com

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THE ENTERASYS EDGE™

News and Information from Enterasys Networks

Vol.1, No.1

Need a Second Opinion? Consider Enterasys

In evaluating the enterprise networking landscape, Mark Fabbi from Gartner suggests that CIOs should "competitively bid on major infrastructure upgrades." In fact, he estimates that, simply by seeking competitive bids, Global 2000 companies can save at least 15 percent on the cost of these upgrades.

But price is not the sole reason to broaden the vendor evaluation process. Fabbi adds, "There are a number of viable alternatives, and enterprises are encouraged to evaluate their requirements and not blindly follow market hype." Among his alternatives: Enterasys Networks.

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"A return to competitive bidding will save the average Global 2000 enterprise at least 15 percent, representing millions of dollars..."

—Mark Fabbi, VP, Gartner Research

"Cisco Price Premiums: Best Practices Breakdown"
December 2002

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Expert Advice for Aspiring CIOs and IT Managers

Laid Off

How do I get through this one?

Q: I am a 25-year IT professional who grew up in the business. I was laid off from a director of IT position almost a year ago because of severe cutbacks and the shutdown of a major part of the business. I have not been able to locate a similar position since. However, I have been doing consulting work during that time. Will the consulting work be looked at as a negative going forward? How should I explain it on my résumé?

A: Being downsized from a company does not carry the stigma it once did. In addition, many executives have turned the “opportunity” into a wonderful new start with a company in the same industry and functional area or in a different industry altogether. Make sure you take this time to reflect on what your skills are, where they would have the greatest impact and what type of work will be most satisfying to you going forward.

Consulting done well is rarely a negative. On the contrary, depending on the engagements you elect to take on, you may be more valuable to a prospective employer. There are many positive elements to consulting, including remaining current



with the issues of the day and the ability to work with clients on their business problems that are important enough for them to be paying someone like you to solve. Consider projects where you know you can succeed, that will add value to your client's business, and will sharpen and enhance your skill set. Remember that when consulting, your goal should be to exceed your client's expectations. If you can accomplish that, you will have plenty of projects to choose from and can be selective about the work you take on.

When listing consulting engagements on your résumé, indicate specifically what you were hired to accomplish, what the condition was when you arrived, and what was accomplished under your leadership, guidance and direction.

Finally, if there is a downside to consulting, it is the fact that consultants rarely remain with a company long and thus do not experience the ramifications of the choices and decisions

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Career Counsel

they recommend. To repeat, that's why you need to exceed expectations and make sure your work can be easily referenced.

—Gerry McNamara, partner of Heidrick & Struggles, Charlotte, N.C.

SHORT JOB STINTS

Q: I was laid off in spring of 2002 from a multinational company, and shortly after I was able to land a position as a director in a consultancy. Then I was let go because of the economic conditions. Should I revise my résumé to include this job that I held for less than six months?

A: I suggest you do add the most recent assignment, and note why you were laid off. You are not alone in being laid off. Most people will not judge you based on this one job situation but will look at your career progression during the past 10 to 15 years. However, if there are extenuating circumstances for which you have held a few short-term jobs in a row, you might use a cover letter to explain that. A cover letter enables you to tailor and highlight certain experiences that will be of interest to each particular client.

—Beverly Lieberman, president of Halbrecht Lieberman Associates, Stamford, Conn.

OUT OF I.T.

Q: I was laid off from an IT position almost one year ago. My unemployment insurance has run out, and I was forced to take a low-level job that is not in IT. Will this hurt my IT career?

A: Taking a job outside of IT can be risky unless it is in another business function that will teach you valuable skills. If it is in planning, finance, marketing or sales, this can only enhance your overall knowledge. If it is really just a way to make a living, then do it and keep your résumé out there with good recruiters and keep up your networking. Obviously, this is a difficult economic period, but hopefully your off-track job will only be an interim step. Most employers will respect that you did what you did to pay the bills. In addition, this might be a good time to take some business or technology courses that enhance your value as an IT professional.

—B.L.

TOP PRODUCER

Q: I was recently let go as part of corporate restructuring. I was one of the top producers, resulting in president's club status and other recognition during the past three years. I am finding it difficult to answer when invariably every recruiter asks me the question, Why were you let go when you were so successful?

A: There are really two areas to address. The first and most important one is to secure new employment. The good news is that you are getting interviews, which indicates that you have a strong résumé. I recommend you answer the ques-

tion, Why were you terminated? by stating the truth: I don't know. Bring with you whatever accomplishment-supporting documentation you have, such as your president's club letter and performance reviews (you should always ask for and keep a copy of your evaluations). And urge all of your interviewers to check your references firsthand.

The second issue is quite a bit trickier. There is an infinite number of subjective reasons for your being put on the cut list. Perhaps someone didn't like you, or maybe you were perceived as expendable because of some behavior other than your productivity. You may never discover the real reason. If you are confident that there has been foul play, check with an attorney. Otherwise, just make sure that your ex-employer is not giving damaging reference information regarding your separation, and move on to looking for your next job.

—Mark Polansky, managing director and member of the advanced technology practice at Korn/Ferry International, New York City

LOWER SALARY

Q: I have been unemployed for six months. Should I wait out the tech slowdown for another three to six months? Financially I am able, although it will be tight. I could take a lower-paying job, but my main concern is that being unemployed for six to 12 months can make me seem technically obsolete.

A: I am far more concerned about how six to 12 months of unemployment will reflect on your real or perceived lack of marketability rather than any potential technical obsolescence. It is always better to be employed than not, for many reasons—particularly financial and emotional. Plus, it keeps you in the game. Your new employer will recognize your talents, and getting back to your former earning level will be a matter of a promotion. A recruiter or potential employer would much rather hear, "I took this very interesting job and have made a difference at my company while waiting for an opportunity more in line with my previous level of achievement," than, "I have remained unemployed all this time waiting for a suitable job at my last salary level." And I very much like your prediction of a technology recovery in three to six months. Let's hope that you are as clairvoyant as you are practical.

—M.P.

The Web-based Executive Career Counselor column is edited by Director of Online Research Kathleen Kotwica (kkotwica@cio.com).

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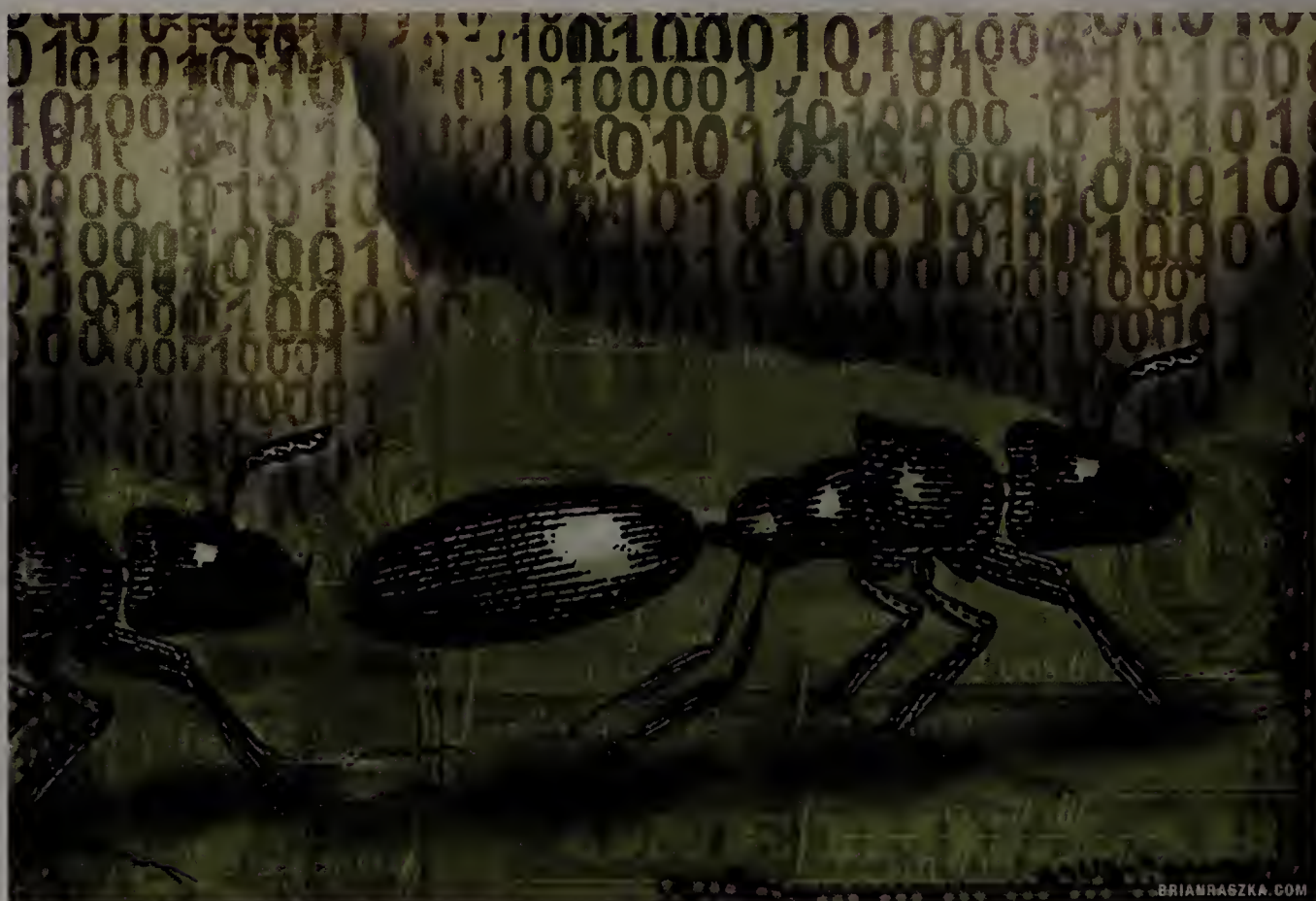
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Servers on the Edge

Blades promise efficiency and cost savings

BY JOHN EDWARDS

Edited by Christopher Lindquist. Send your thoughts and ideas for future columns to clindquist@cio.com.

JUST CALL THE RESEARCHERS at the Los Alamos National Laboratory's Advanced Computing Laboratory "blade runners." That's because the New Mexico-based facility has replaced its conventional parallel cluster supercomputer with

blade servers, compact card-based devices that promise to replace standalone servers.

For Los Alamos, blades offer a less costly and more reliable way of handling massive, parallel processing-based computations, such as simula-

Blade runners...Semantic Web...VC woes

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tions of galaxy formations and supernova explosions. "In general, it's a more efficient solution with respect to space and energy consumption," says Wu-chun Feng, leader of the laboratory's Research and Development in Advanced Network Technology (Radiant) team.

As blades slice into the IT mainstream, the technology may mark an important new stage in server evolution, one that will save space, boost reliability, streamline management and, ultimately, cut costs.

For vendors, blades provide a unique opportunity to lock customers into a long-term relationship.

Vendors are also hoping that blades will breathe fresh air into a dismal server market. Proprietary technologies, a nagging storage integration problem and old-fashioned vendor hype, however, all threaten to dull blades' appeal.

Blades and Razors

A blade resembles an ordinary PC add-in card. In this case, however, the card is the computer. A typical blade features one or two processors, memory, storage—everything you would find inside a typical standalone server, minus the power supply, fan, network cables and other standard support components.

Individual blades sit inside a rack-mountable enclosure (sometimes called a razor). Those enclosures provide the blades' support apparatus, such as I/O and power. A blade enclosure is usually called a U, which stands for a unit of vertical rack space—approximately 1.75 inches. Vendors generally discuss blade density in terms of the number of blades that can fit inside a standard 19-inch-wide 42U rack.

By sharing a common high-speed bus and U-mounted support components, blades achieve a degree of efficiency in size and power that standalone servers can't match. Shrinking a server to the size of an

add-in card permits impressive densities. Woodlands, Texas-based blade-maker RLX Technologies, for example, can wedge 24 blades in a 3U, which adds up to 336 independent servers in a single 42U rack with as much as 40 terabytes of storage and 336GB of memory.

Blades also let enterprises take advantage of the efficiency and reliability of clustered technology. Like most cluster-based systems, blade servers can be configured to include load-balancing and failover

capabilities. Individual blades are usually hot-pluggable, which makes it easy to swap out a board with a new one in the event of system failure. Additionally, placing servers near each other and managing them under a single application can streamline administration.

Server Squeeze

Although blade technology has existed for several years, 2003 marks the first time that full-fledged blade products are available from the three major Intel server makers: Dell Computer, Hewlett-Packard and IBM. Those vendors—along with Sun Microsystems and its Intel- and UltraSparc-based blades, and lesser-known RLX Technologies, which produces blades based on both Intel and Transmeta processors—all hope that the technology will help jump-start a moribund server market.

Blades' roots reach back to the halcyon days of the dotcom boom, when space-squeezed Internet data centers began looking for compact servers they could pack together as closely as possible. "Simply put, with blade servers, they could put more servers per square foot than they could using conventional rack-mounted servers," says John Enck, an analyst who covers the blade market for Gartner.

Betting on Blades

Technology Blade servers

Anticipated benefits Dozens of server blades can fit in the space of a single traditional server, resulting in space and power savings. Blades promise enhanced reliability through simple hot-swapping as well as simplified server management through unified interfaces.

Hurdles Still a new and relatively unproven technology. Proprietary offerings can lock customers into a long-term vendor commitment. Current iteration doesn't link well into SANs.

Primary markets Enterprises with server-intensive IT needs, such as ISPs, online merchants and media streamers.

Estimated cost \$1,800 to \$8,000 per blade plus a rack.

Players

Dell Computer PowerEdge, www.dell.com

Hewlett-Packard ProLiant BL, www.hp.com

IBM eServer BladeCenter, www.ibm.com

RLX Technologies ServerBlades, www.rlx.com

Sun Microsystems Sun Fire Blades, www.sun.com

Today, vendors are looking to expand the number of potential customers by marketing blades to just about any enterprise that needs to operate multiple servers. Most observers, however, believe that the technology is still best suited for organizations with server-intensive IT shops, such as Internet server providers, online merchants, financial institutions, research labs and media streamers.

For vendors, blades provide a unique opportunity to lock customers into a long-term relationship. Just as shaver-makers design razors to accept only one type of blade—their own—blade-server vendors



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Unfortunately, the people in charge of creating, testing and monitoring enterprise applications can't talk to each other. It's not because they need more sensitivity training, group hugs, and gurus. It's because they need a common language to communicate and a proven management solution to help them find and fix the problem fast. They need Wily 4.

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aim to enmesh customers inside a highly proprietary environment. "There's no ability to interchange anything between products," notes Enck.

Getting enterprises to commit to a particular type of blade technology is crucial to vendors at this early stage, since the market is projected to skyrocket over the next few years. Imex Research predicts global sales will soar from \$50 million in 2002 to \$3.5 billion in 2005, according to Anil Vasudeva, president of the San Jose, Calif.-based IT research company.

Vendors realize that blade sales made today will continue to pay off for many years. They understand that in addition to hooking organizations to their technology, the large enterprises will drag smaller organizations along in their wake. "Typi-

Blade technology lies at the heart of Los Alamos's year-old Green Destiny cluster, which is designed to combine supercomputer power with size and energy efficiency. Using 240 blades supplied by RLX, the system is capable of 160 gigaflops (billions of computations per second). That's not particularly fast for a supercomputer; the Q supercomputer, Green Destiny's conventional server-based counterpart, is almost 200 times as fast. Green Destiny, however, costs 640 times less than Q—\$335,000 compared with \$215 million. Q also requires a costly temperature-controlled, dust-free environment.

Los Alamos's old 128-processor standalone cluster consumed 48 square feet of space. Green Destiny, on the other hand, requires only 6 square feet. Feng says

technology, there are already many different flavors of blades," he says. "Make sure you buy the blade that's appropriate for your application and your environment."

Yet finding the right type of blade is hardly a simple matter, since vendors are approaching the technology from various directions. The three major market players—Dell, HP and IBM—are focusing their efforts on general business customers by providing blades based on mainstream Intel processors, ranging from the antiquated Pentium III (on Dell and HP systems) to the high-octane, dual-processor Xeon (on IBM blades). Sun, meanwhile, is following a tactical approach that targets specific customer needs such as network edge applications, telecommunications and enterprise applications. RLX, for its part, is paying special attention to technical customers.

It's still too early to tell which blade strategy, if any, will ultimately dominate the market. Unfortunately, the proprietary nature of current blade products means that managers will likely have a difficult time shifting to another vendor's technology should their current vendor's blade fall out of favor. "Everybody calls their product a blade, although there's a lot of differentiation in terms of what processors they use, how physically big they are...and what capabilities [they have]," says Gartner's Enck.

Beyond the problem of sorting through various blade designs, early adopters face the headache of dealing with management software.

cally, large enterprises tend to lead the way, and what they do impacts the market further down the line," says Charles King, infrastructure hardware research director for The Sageza Group, a computer industry research company in Mountain View, Calif.

A Hot Technology

Los Alamos ventured into blade technology during the summer of 2001, when it began replacing a 128-processor parallel cluster supercomputer that was failing on an almost weekly basis. Part of the problem was the laboratory's less-than-ideal physical plant. "Our entire cluster environment sits in a dusty, hot—80 degrees Fahrenheit to 85 degrees Fahrenheit—and confined work area inside a warehouse," says Feng. By consuming less power, blades generate less heat and are therefore less likely to fail, particularly when operating in such a subpar environment.

Green Destiny also provides "significantly better reliability" while cutting costs. "Our belief is that we will save roughly two to three times in terms of total cost of ownership," he says. His team is so impressed with blades that it will use the technology in its next supercomputer—a 480-processor monster cluster, dubbed The Green Machine. Looking to the future, Feng says, "I would view our Green Destiny cluster as the Toyota Camry of blade-server clusters."

All Blades Aren't Alike

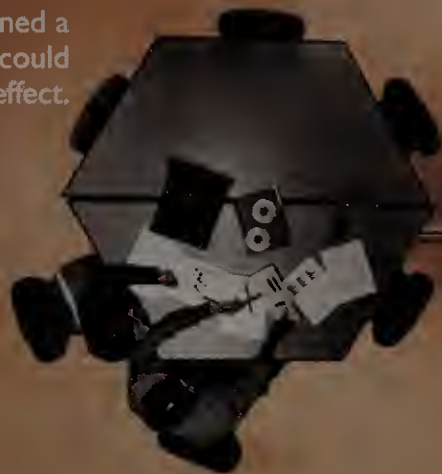
While many enterprises shun emerging technologies, Los Alamos had no choice but to be a trailblazer, says Feng. "With the type of research that we do, we have always been inventors, pre-adopters or early adopters of technology," Feng admits, however, that blades can be a tough buy for CIOs who have just begun studying the market. "Although blade servers are a new

A Management Problem

Beyond the problem of sorting through various blade designs, early adopters face the headache of dealing with management software. "Every blade today has memory, processors and disks on it, so you have to manage all those resources on each blade," notes Enck. A blade server usually comes complete with an operating system (typically Windows or Linux) and a dedicated—and usually proprietary—management application.

The problem with those programs is that they preclude the mixing of blades from various vendors. Fortunately, at least some degree of standardization is likely to

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arrive within a few years. "Standards are coming, but I think it will stop at the point of being able to have complete interoperability of all the blades between all the vendors," says Enck.

IBM is hoping to smooth the path to standardization—and promote its blade strategy—by making its Director management software available for resale by other blade-server vendors. "The dream, of course, is that there will be software solutions that will allow the blending of server platforms in these squirrely heterogeneous environments that a lot of companies have," says Sageza's King.

But there will be limits to standardization, adds Enck. "I don't think we will ever see a situation where we will be able to take an IBM blade and put it into a Dell enclosure," he says.

The Next Hurdle

Another major hurdle facing blade vendors is getting their products to work with advanced storage systems. "There are limits to integrating blades into SAN and other direct access storage structures," says Enck, who says some blade vendors have added SAN and other support, but only in a limited fashion thus far. Storage integration is gradually becoming a reality, however. IBM, for example, is offering optional fibre channel and gigabit Ethernet capabilities, giving its blades the flexibility to support both storage area network and network-attached storage environments. Other vendors are likely to follow IBM's lead.

Many observers believe that as blades become more capable, it's only a matter of time before they begin challenging stand-alone server sales. "At some point, businesses are going to have to start buying a technology to replace boxes that are simply getting out of date," says King. Enck concurs: "Looking out five years, I think this will be a very strong technology." ■

John Edwards is a freelance writer based in Gilbert, Ariz. He can be reached via e-mail at john@john-edwards.com.



UNDER DEVELOPMENT

Semantic Web

Searching Through Babel

THE WORLD WIDE WEB stands as a living version of Jorge Luis Borges' Library of Babel. It's also why the Semantic Web is taking shape, to help make sense of it all.

"There's a plethora of information, and it's not filtered," says Allan Goode, CEO of Agent Software in Mountain View, Calif. Agent formed last October to build a Semantic Web tool for NanoSIG, a global nanotechnology networking group that wants to give members real-time access to data about the growing nanotech field. Agent's efforts are focused (at least for now) for a reason—Semantic Web technology is still in its infancy.

The Semantic Web, brainchild of Web inventor Tim Berners-Lee and his cohorts at the World Wide Web Consortium, intends to make Web searching more efficient. The goal is to reduce the amount of human involvement required for actions that computers can do automatically, such as extracting meaning from content.

It all sounds like XML, but XML doesn't convey, for instance, that a dresser and chest of drawers are the same thing. The Semantic Web will be able to draw such conclusions, thanks to the Resource Description Framework (RDF), which can describe the contents of a collection of text, making it possible for machines to automatically compare even incompatible documents.

Agent Software uses a variety of software agents to find nanotech-related documents on the Web, pull them into a repository and give them RDF tags. Other agents then parse the documents into a variety of categories, creating a real-time search engine that lets the user define categories and priorities.

The NanoSIG is also talking with Dynago, which is testing a product that can tag documents in RDF. Dynago pulls HTML from the Web and marks it up with XML. XML documents can be easily converted into RDF, opening the data to other computers.

Sucking documents into databases to tag them is not ideal (even within its niche, a quick Web search on nanotechnology retrieves some 500,000 Web documents). And until RDF and its kin spread, the Web will remain a Library of Babel. —Michael Fitzgerald

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TECH TACT
Ideas

Betting on the Smart Money

Venture capital still flows for good ideas

BY CHRISTOPHER LINDQUIST

THERE'S A SCENE in *Risky Business* where an adolescent Tom Cruise and his buddy Barry are working on their "Future Enterpriser" project—a notepad holder with a light to let people know when a message is waiting. It was a dim-bulb idea, and one that wouldn't have garnered a penny in 1983, when the movie premiered. But had they called it a dotcom and presented the bogus blinking memo pad during the '90s boom, it probably could have earned them a few million up front.

The days when bad ideas could get funded as easily as good ones are gone, however. But the good ideas can't find any venture money either...or can they?

Listening to some venture capitalists these days, you'd have the impression that the world came to an abrupt end in 2000 and that we're all damned to purgatory or worse for the foreseeable future. The front page of VentureEconomics.com (at least as of this writing) was a gloomy list of bad news for VCs. Those startups that were liquid as mercury a few years ago went dry when the IPO and merger and acquisition markets evaporated.

Failure rates are also unusually high. Startups first funded in 1999 failed at a 22 percent rate, compared with an average of 15 percent for those funded the previous seven years, according to a September 2002 *Silicon Valley/San Jose Business Journal* story that noted data from VentureOne.

I still see some hope in those numbers—if only a glimmer. The year 1999 saw more than 4,500 companies receive investments (according to the most recent



**VC levels in 2002
look like 1998
numbers—more
than five times
what they were
in 1992.**

—Christopher Lindquist

PricewaterhouseCoopers/Venture Economics/National Venture Capital Association MoneyTree survey). That was 1,000 more than 1998 and around 3,500 more than any of the years between 1992 and 1994. That means a lot of companies born during the boom-boom years are still alive. And that's good news for innovation, even in this down economy. Call me a Pollyanna. But I'm tired of all the funeral talk.

Of course, I'm also a realist. Things are going to get worse before they get better. A lot of companies have stripped themselves to the bone and are living off whatever pennies they managed to dig out of cushions in those \$1,000 office chairs after the party was over. But treading water doesn't build value—and eventually the guy who lent you your life jacket is going to want it back. As John Slitz, a former partner at Osprey Ventures and now CEO of Las Vegas-based software company Systems Research & Development, told me, "This investment money was never intended to be a trust fund." That means more failures are on the way. The IBMs, Oracles and Suns of the world are currently buying up the best of an injured lot. Some startups are merging in a desperate attempt to stay alive (though that's often "like tying two rocks together and hoping that they float," says Nick Sturiale, partner at Palo Alto, Calif.-based Sevin Rosen Funds), and when the current action stops, it's going to leave a lot of companies with exactly zero options—pun intended.

And even at that, I still see some cheery graffiti. The previously mentioned MoneyTree survey tracks VC investments across the country. Look at the numbers, and you'll find that VC levels in 2002 look like they'll land right around where they were in 1998 (\$21.6 billion)—more than five times what they were in 1992. Granted, it may look like the apocalypse compared with the \$107.3 billion in venture invested in 2000—but let's consider that a case of temporary insanity.

The dilettantes are gone, but small companies still come through my door and ring my phone every day. They're working out of warehouses in Fremont or Hoboken instead of penthouses in San Francisco these days—but they're still working. And almost all the dumb money is spent—so I'm hoping that it's a good time to bet on the smart money. **CIO**

Christopher Lindquist (clindquist@cio.com) is CIO's technology editor.

If you're busy monitoring your servers, who's watching your business?



The new HP ProLiant DL740 8-way with hot-plug RAID memory.

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- 6-64 bit/100 MHz PCI-X slots
- Integrated Lights-Out Standard (iLO) for Remote Server Mgmt.



The new HP ProLiant DL760 G2 8-way with hot-plug RAID memory.

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- Groundbreaking F8 chipset
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- Remote Insight Lights-Out Edition II (optional) for Remote Server Mgmt.

What challenges do you face today? Decreasing budgets? The lurking possibility of downtime? It's hard enough to focus on moving your business forward when you're constantly looking over your shoulder to see if everything is up and running.

Besides, that's the job of the new HP ProLiant DL700 series running Intel® Xeon™ MP processors. An adaptive infrastructure begins with these HP ProLiant servers which come equipped with tools that predict, self-diagnose and fix many fault conditions. And now with hot-plug RAID memory exclusively from HP, you can add or replace DIMMs without turning your systems off. Both work with the HP ProLiant Essentials Foundation Pack featuring Insight Manager 7 software which monitors and controls your infrastructure for maximum uptime.

At the end of the day, you'll have more control over your infrastructure, help avoid unplanned downtime and reduce overall maintenance costs. Not to mention freeing yourself up for more important things.

To learn how HP ProLiant servers can be a part of maximizing your company's uptime, download CMP's executive brief on high availability at www.hp.com/go/proliant83 or call 1-800-282-6672, option 5, and mention code YPX.



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SUNDAY, APRIL 27

8:00 am–1:30 pm
Golf Tournament

3:00 pm–5:00 pm
Registration

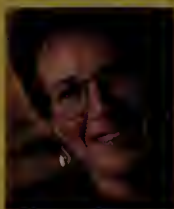
6:00 pm–8:00 pm
**Registration, Welcome
Reception & Golf Awards**

MONDAY, APRIL 28

7:00 am–8:00 am
Networking Breakfast

8:00 am–8:15 am
Welcome

ABBIE LUNDBERG,
Editor in Chief,
CIO Magazine
JONATHAN ZITTRAIN, *Con-*
ference Moderator
and Cofounder,
The Berkman
Center for Internet
& Society, Harvard Law School



8:15 am–9:15 am
The Complete CIO
CHARLIE FELD,
Founder, The Feld
Group & Former
CIO of First Data
Resources, Delta
Air Lines, Burling-
ton Northern and
Frito-Lay



CIOs increasingly have more of a hand in defining and driving corporate business strategy. And everyone—business line managers, the executive management team, the CEO, the board of directors—has greater expecta-

tions of their CIO. What are the essential skills and attributes needed to thrive in the CIO role today? Charlie Feld talks about his own experiences over time as CIO of very diverse businesses, and what his client companies demand today.

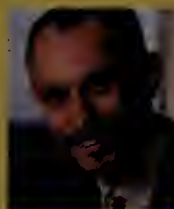
9:15 am–9:40 am
**2nd Annual State of the CIO
Survey Results Highlights**

LORRAINE COSGROVE,
Research Editor,
CIO Magazine



This year's exclusive survey of over 500 IT chiefs reveals a very different set of challenges and a new set of priorities from a year ago. We share some of the highlights.

9:40 am–10:30 am
**View from the Top:
Creating Value
Through IT**
NIGEL MORRIS,
Cofounder, Presi-
dent & COO,
Capital One Corp.



Morris shares his viewpoint on the role of IT, and the criteria for measuring a CIO's ability to articulate and deliver true IT value to the enterprise.

10:30 am–11:00 am
**Coffee Break and Sponsor
Exhibits**

11:00 am–12:40 pm
Sponsor Briefings

12:45 pm–2:15 pm
Networking Lunch

2:30 pm–3:45 pm

**Delivering Value: How to
Manage Your IT Portfolio and
Make a Strong Business Case**

Participants:
JACK KEEN, *Coauthor, Making*
Technology Investments
Profitable

HOWARD RUBIN, *Vice*
President, META Group, Inc.

In today's business environment, it's all about value. And it's up to the CIO to make sure that every IT investment delivers maximum returns. In this session, we'll explore how to build the portfolio that's right for your organization, how to manage it for greatest business benefit, and how to use it as an effective communications tool with your business partners. We'll also discuss how to make a compelling business case for new IT initiatives—even if your company is in cost-cutting mode.

3:45 pm–5:00 pm
The CIO Interview
MONTE FORD
Senior Vice Presi-
dent & CIO, Ameri-
can Airlines



Ford took on the top IT spot at the world's biggest airline at the end of 2000, then had to deal with the acquisition and merger of TWA, the economic recession, Sabre selling its outsourcing business to EDS—and the events of 9/11. *CIO* magazine Editor in Chief Abbie Lundberg talks with Ford about his pivotal role in the organization and his plans for the future of IT.

5:00 pm–6:30 pm

**CIO Peer-to-Peer
Networking & Reception**

TUESDAY, APRIL 29

7:00 am–8:00 am

**Breakfast & Informal
Discussion Roundtables**

8:00 am–8:45 am

**What Every CIO Should
Know About Digital Rights
Management**

JONATHAN ZITTRAIN

Entertainment companies aren't the only ones with digital content worth safekeeping. More companies now are realizing the potential threats and are seriously weighing the risks of not implementing digital rights management (DRM) technologies. Zittrain explores recent trends in DRM deployment and discusses the impact on businesses of all types.

8:45 am–9:45 am
**Best Practices for Getting
Outsourcing Right**

Moderator:
MARTHA HELLER,
Director, CIO Best
Practice Exchange
& CIO Select



Any CFO will tell you that the more you outsource the more you save. But as CIO, you know the pitfalls: lowered productivity, cultural conflicts, service level problems, to name only a few. This panel of CIOs, drawn from the CIO Best Practice Exchange, our online network of CIOs, will provide best practices

for determining what to outsource when, and how to sell the strategy to the board.

9:45 am–10:30 am
Becoming a Trusted Business Partner

JERI DUNN,
Senior Vice President & CIO, Tyson Foods, Inc.



The CIO's sphere of influence has never been larger. You must work with executive management and peers, internal and external customers, line of business directors, staff and vendors. You must set and achieve both strategic and tactical goals, articulate and demonstrate ROI, communicate and manage expectations. Dunn shares the benefit of her experience.

10:30 am–11:00 am
Coffee Break & Sponsor Exhibits

11:00 am–12:40 pm
Sponsor Briefings

12:45 pm–2:00 pm
Networking Lunch

2:15 pm–3:30 pm
InFocus Workshop Breakout Sessions

InFocus Workshops are designed to give conference attendees the opportunity to meet in smaller groups, and discuss specific topics and issues in greater detail.

**InFocus Workshop #1
Building the Right Team: Your Success Depends On It**

JUDY B. HOMER,
President, JB Homer Assoc.



Building the right IT team may not be an easy task—but as a CIO your success depends on it. In today's highly competitive technology talent market, what factors do you look for when you recruit and build your team that will contribute to realizing your goals? How can you become a more effective leader of your team? Executive recruiter Judy Homer provides you with tools to identify and overcome the obstacles in your path, and set the milestones for measuring your success. Workshop participants develop strategies and create a checklist for visualizing your goals and for building the team needed to support you in making them a reality.

**InFocus Workshop #2
Meeting Your Goals: Where Executive Coaching Can Help**

MICHAEL BRENNER, *Chief Resource, Brenner Executive Resources, Inc.*



The biggest problems many CIOs face are with people, not with technology. The CIO needs to adapt to greatly different human interactions to handle the 360 degrees of interaction. You can't always be your own mentor. Executive coach Michael Brenner discusses the special challenges CIOs face and how to use executive coaching as a tool. The benefits can include having an objective sounding board, determining accountability, resolving conflict and maintaining work/life balance. He provides sources of executive coaches, tips on how to pick and work with one, and explores specific situations suggested by attendees.

**InFocus Workshop #3
Plugging Business Case Leaks in the IT Value Pipe**
JACK KEEN, *Coauthor, Making Technology Investments Profitable*

A dependable business case is a vital management tool, not just to "get the money," but throughout the entire life cycle of a project, from the moment it is conceived, through proposing, selection, implementation and systems operations. Like many things in life, however, business case appearances can be deceiving—the majority are unintentionally inaccurate and incomplete, thus dangerously misleading in their recommendations to management. Keen shows us how to identify the likeliest weak links and fix them. He shares how to avoid missing benefits, missing intangibles and poorly supported calculations and reasoning.

**InFocus Workshop #4
Effectively Marketing IT Internally**
PATTY JARAMILLO, *Founder, Creative IT Marketing*

A common CIO lament is that the business and financial sides of the house don't understand IT—but

Jaramillo's recent study shows that most CIOs do not have a plan in place for internal marketing communications for IT. To be successful, you need to continually educate the business side to IT value, and you need to do it in terms they understand. Jaramillo talks about the importance of being an active communicator, and shares techniques and tools that have worked for a number of organizations.

3:45 pm–4:45 pm
Developing the Next Generation of IT Leaders

Moderator: RICK SWANBORG,
President, ICEX

Panelists: DAVID GUZMAN,
Senior Vice President & CIO, Owens & Minor



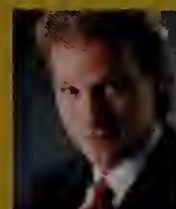
EDWARD L. GLOTZBACH,
Executive Vice President & CIO, SBC

MICHAEL HARTE, *CIO, PFPC*
MAMIE MILLARD, *Senior Vice President, Technology, Travelocity.com*

In addition to honing their own leadership abilities, CIOs are concerned with identifying and developing effective leaders in their organizations. Swanborg and a panel of CIOs discuss the challenges involved, and share the techniques they've used to mold the next generation of IT leaders.

4:45 pm–5:30 pm
How to Get a Life

DR. RICK BRINKMAN,
Author of Life By Design: Making Wise Choices in a Mixed-Up World



With the Internet, cell phones, laptops, wireless and loads of other nifty gadgets, we can now work anytime from anywhere in today's 24/7 global business environment. Dr. Rick looks at why it's increasingly important to maintain a healthy balance between Life and Work.

5:30 pm–5:45 pm
Closing Summary
JONATHAN ZITTRAIN

5:45 pm–6:45 pm
Networking Reception

7:30 pm–9:30 pm
CIO Dinner Party

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CIO Contact Information

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Today, if I'm lucky,

I'll be totally ignored.

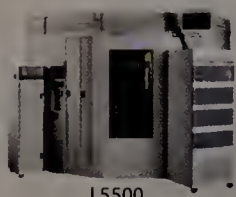
That means systems are humming

and data is flowing.

If not, I have to fix it.

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EXECUTIVE Summaries

March 15, 2003

COVER STORY | Open-Source Agenda

By Christopher Koch | 52

The open-source movement is helping turn significant chunks of the IT infrastructure into commodities by offering free alternatives to proprietary software. The promise of the past several years has begun to materialize as one by one the hurdles to open-source adoption have dropped away. Major enterprises are running mission-critical functions on open-source IT. Big vendors have lined up to support it or port their applications to it. CIOs who have implemented it report significant reductions in total cost of ownership. Our conclusion? CIOs who don't come to terms with this revolution in 2003 will be paying too much for IT in 2004. To avoid getting stung, CIOs should pursue as least some components of this 2003 open-source agenda: Get your feet wet with relatively low-risk Internet applications. Investigate the new support offerings from Dell, IBM, Sun and others. Start replacing proprietary Unix hardware with less costly Intel systems running Linux. Standardize infrastructure, including Web servers and desktop systems. The more daring will move enterprise level apps like SAP to Linux platforms.

"The way open source has been accepted and embraced by the IBMs and Suns has put it on our radar screen. I like what I'm seeing because however this shakes out, it represents a flight to quality in software."

—JUDITH CAMPBELL
SENIOR VP AND CIO
NEW YORK LIFE INSURANCE

Microsoft XP Resistance

By Christopher Koch | 62

MICROSOFT LICENSING 6.0 requires enterprises to buy a two- or three-year subscription that covers any number of upgrades—a plan that CIOs complain will cost them more money and wrest the control they previously had over upgrade timing. Though Microsoft's deadline for customers to sign up for the plan passed at the end of July 2002, by November a CIO survey found that 51 percent of respondents still had not upgraded to the XP operating system. Now, if they do, they'll have to pay the full price, even if they already have older versions of Windows software. Because of Microsoft's high-handedness, combined with an intensely cost-conscious economic environment and the arrival of an increasingly viable competitor in GNU/Linux, many CIOs have chosen to play chicken with Microsoft. They're freezing their Microsoft infrastructure investments and buying new licenses only as needed, waiting to see if, in the next few years, Redmond modifies that policy or its pricing.

Cigna CRM Disaster

By Alison Bass | 66

IN JANUARY 2002, Cigna HealthCare's \$1 billion IT overhaul went live with 3.5 million members of the insurance company moved from 15 legacy systems to two new platforms in a matter of minutes. However, the resulting glitches in customer service were so significant that millions of dissatisfied customers walked away, and analysts downgraded Cigna's stock. The problems stemmed from Cigna's haste to get its new systems up and running. The IT team didn't take time to do thorough volume testing, and the back-end data just didn't work at the front end. And, instead of waiting to see how the new systems performed and delivered, Cigna precipitously laid off thousands of customer service reps. The data glitches have since been fixed, more experienced project managers assigned and some of the veteran reps hired back. Lessons learned include the risks of hasty deployment and the need for methodical testing, experienced in-house project managers and more standardized governance.

Case Files: Athens' Wireless Cloud

By Michael Kanell | 76

A NEW WIRELESS local area network cloud covers 24 blocks of downtown Athens, Ga. With nine Wi-Fi transmission boxes spread around downtown, the cloud welcomes laptops and PDAs fitted with wireless networking cards. Users get access to local event news, and if they are University of Georgia students or faculty, they also have Internet access. The cloud's goals are to lure wireless providers and make downtown Athens a more vibrant place. But not even the 15 participating businesses have a clear sense of where this is going. The Athens project is a unique example of cooperation among academic, government and business, says Mark Lowenstein, case commentator and wireless industry analyst. He also praises the thought given to the type of content users would be interested in accessing while mobile—a departure from "build it and they will come" deployments.

E-Commerce Leadership

By Elana Varon | 84

IN THE POST-DOTCOM BUBBLE PERIOD, business unit executives in many industries relinquished control of e-commerce applications, acknowledging that the IS team can deliver applications more efficiently. CIOs became overseers of online operations, with a focus on execution, while directing the strategic application of the technology. For example, CIOs at Sears and Solectron are deploying systems that make it easier or more cost-effective for customers to use their services. But this e-leadership role may not last: When the economy picks up, business unit leaders may chafe at CIOs' constraints on e-commerce spending. To retain their influence, CIOs must develop collaborative governance structures now, gain a thorough grounding in the needs of external customers, hold e-commerce strategy sessions and educate business leaders on how IT supports the big picture.

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